CONSTRUCTION NEWS

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RAILWAYS.

(* *denotes that this work is advertised in Engineering News.*)

ALBERTA & GREAT WATERWAYS.—Arrangements are now under way for active work on what will be most northerly railway in Canada, which will have direct water connections with the Arctic Ocean. This is the Alberta & Great Waterways Ry., which has been projected for some time past, and is planned to run from Edmonton, Alta., 350 miles northeast to Fort McMurray, where it will connect with 3,500 miles of inland navigation on the Mackenzie, Athabasca and Peace Rivers. E. A. James, of Edmonton, Alta., Gen. Mgr. of the company, is at present in Montreal, to make arrangements for starting active work next year. The proposition has been financed and the company is ready to commence construction. The first section to be built will be between Edmonton and Lac Labiche. Noted on Nov. 18, March 25, etc.

AVOYELLES, PALMETTO & GULF.—This company proposes to build from Opelousas via Plaucheville and Palmetto to Moreauville, La., 41 miles. Naff & Ollier, of Opelousas, La., are the engineers. E. A. Plauche, of Marksville, La., is Pres.; Dr. R. G. Hawkins, of Palmetto, La., Vice-Pres.; H. E. Estorge, Treas.; John H. Harmanson, Secy., and Dudley L. Guilbeau, Attorney, all of Opelousas, La.

BEAVER VALLEY & NORTHWESTERN.—Surveys are being made and it is planned to begin construction work early in 1910, from Gage, Okla., to Hooker, 105 miles. C. A. Holmes is Secy., Gage. Noted on Nov. 4.

BUFFALO, ROCHESTER & PITTSBURG.—Contract has been awarded to D. J. CARSON, Dubois, Pa., for grading work on the main line, on three miles near Parkwood, Pa.; also on two miles near Clarksburg, Pa.

CAMPBELLFORD, LAKE ONTARIO & WESTERN.—Application has been made by the Canadian Pacific Ry. for an extension of time for building the Campbellford, Lake Ontario & Western Ry.

CLINTON, OKLAHOMA & WESTERN.—Surveys are being made from Clinton, Okla., southeast to Lehigh, 188 miles. T. J. Nance is Pres., Clinton. Noted on April 1, '09. Also Jan. 7, '09, and Dec. 10, '08.

COLUMBIA RIVER BELT LINE RY.—Incorporated in Oregon by Russell Hawkins, J. D. Edwards and John M. Gearin to construct a logging road from a point on Gnat Creek via Big Creek, to Knappton, in Clatsop County. Capital stock, $50,000.

COLUMBUS, MISSISSIPPI & WEST ALABAMA.—Charter has been granted this company to build a railroad from Winfield, Ala., on the Frisco System, to Columbus, Miss., and thence to Aliceville or Dancy, Ala. The incorporators are C. F. Sherrod, of Columbus, Miss.; Robert W. Watson, of Harrisburg, Pa.; A. E. Silverton, of St. Louis, Mo., and Dr. J. A. Root, of Erie, Pa.

CRANDULL & SHADY VALLEY.—Incorporated in Tennessee with $10,000 capital to build from Crandull, in Johnson County, Tenn., up Beaver Dam Creek to the summit of Cross Mountain in Johnson County. The incorporators are R. E. Donnelly, H. A. Donnelly, R. E. Butler, D. H. Donnelly, W. T. Smythe. Headquarters, Crandull, Tenn.

CUBA.—Max J. Baehr, U. S. Consul at Cienfuegos, reviews the construction of railways in Cuba as follows: Active operations in railroad building are going on in the provinces of Pinar del Rio, Santa Clara, Camagney, and Oriente, and many thousand men are employed. There appears to be a pronounced tendency on part of the various companies to close up the gaps in the lines and to strike out across new territories, so as to give even the most remote corners of the island convenient connections by rail with the largest cities or the smallest towns. With the work on hand finished in the Province of Oriente, the whole southwestern portion of it will be opened up. The general manager of the Cuba Railroad predicts the opening of the Bayamo-Manzanillo line in December, and expects the line between Bayamo and Santiago will be opened in June, 1910. President Gomez recommended in his last message to Congress the building of a line between Nuevitas and Caibarien on the north coast of the island, and a bill has since been introduced in Congress to subsidize the construction of this line. At Camagney a new station is being erected and nearly completed and will be a decided convenience for travelers. The new work in Santa Clara Province consists of an extension south from Placetas to Trinidad. This branch is about half finished and runs between and parallel to the Sancti Spiritus and the Cienfuegos branches.

EDMONTON & SLAVE LAKE.—Company has been granted an extension of time in which to build its proposed railway. Noted on Jan. 21, '09.

GULF COAST & PROVIDENT.—Incorporated in Texas to operate lines in Texas, through Wharton, Lavaca and Colorado counties. The incorporators include Emil Reinbold, Pres., Kansas City, Mo.; T. J. Coughlan, First Vice-Pres., Kansas City, Mo.; Carey Shaw, Second Vice-Pres. and Gen. Mgr., Houston, Tex. A. Schlafi, Houston, is Ch. Engr.

INTERCITY VIADUCT FREIGHT RY.—Incorporated to build a 7-mile freight-connecting belt railway on the viaduct between Kansas City, Mo., and Kansas City, Kan. Several steam roads are interested. Capital stock, $70,000. J. W. Reinhardt, A. R. Ash, Howard Ross, H. J. Curran and William J. Knepp are the incorporators.

KANSAS NORTHWESTERN.—This company, which will build from Wichita, Kan., to Bunkleman, Neb., 330 miles, expects to start surveys on the first section of 27 miles north from Great Bend, Kan., at once. W. R. Crompton, Great Bend, is interested.

MEXICO.—The surveying corps which have been at work laying out the route of the Tesiutlan to Nautla Railway has finished its work and the route and plans have been approved by the government, according to the Mexican "Herald." Work will begin soon. The road will open up one of the richest sections of southern Mexico, traversing the states of Puebla and Veracruz, through sections rich agriculturally and in timber lands. The concession under which the road will be built and operated is one of the best ever granted a railroad company in Mexico. It is dated on Aug. 31, 1908, and provides that within three years from that date at least 30 kilometers of line must be completed and in operation and that during each succeeding year at least 15 kilometers additional must be constructed and in operation, provided that the entire road, extending for a distance of 150 kilometers must be in operation on or before Aug. 31, 1917. The concessionaires named in the contract with the government are Leopoldo Villarreal and Ernesto Zorrilla. From Tesiutlan the road will pass through Hueytamalco, Tlapacoyan, La Palma, Martines de la Torre and the Canton de Jalacongo to Barra de Neutla. The plans of the survey calls for a maximum grade of 3%. The road will be narrow-gage.

NEW ORLEANS GREAT NORTHERN.—An extension from Columbia, Miss., eastward for a distance of about 15 miles, will be built early next year. Right-of-way is now being obtained. Survey has been made. N. G. Pearsall is Gen. Mgr., Bogalusa, La.

OKLAHOMA & NORTH TEXAS.—This company will be incorporated in Oklahoma to build from Durant, Okla., southeast to Paris, Tex., 65 miles. The railroad, at a later time, may be electrified. Bonuses and land grants, valued at $70,000, have been promised. Samuel Graham & Co., of Montreal, Que., are to be the fiscal agents. D. A. & L. S. Powers and others, of Durant, are interested in the project.

PE ELL & COLUMBIA RIVER.—Incorporated in Washington, with $50,000 capital and office at Pe Ell. Company plans to build a line from Pe Ell, Wash., on the Northern Pacific Ry., south to the Columbia River, near Cathlamet, 35 miles. The incorporators include W. C. Yeomans and C. L. Yeomans, of Pe Ell; C. A. Doty, of Doty, and F. B. Hubbard, of Centralia.

VEBLEN & NORTHWESTERN.—It is planned to start construction early next year. Surveys have been made for the main line from Veblen, S. Dak., east to a point near Wheaton, Minn., 38 miles. Right-of-way has been secured. W. J. Hawley, Watertown, S. Dak., is interested.

WASIOTO & BLACK MOUNTAIN.—Company proposes to build 40 or more miles of line from Avila, Ky., along the Cumberland River, to Harlan, Ky., including six steel bridges on concrete piers. T. J. Asher is Pres. and Robert Asher, Secy. and Treas., both of Wasioto, Ky. Company has amended its articles of incorporation to increase the capital from $50,000 to $1,000,000. Contracts were recently let to the CALLIOSON CONSTRUCTION CO. and the GIBSON-CARR CO., of Middlesboro, Ky., for building seven miles up Yellow Creek to connect with the Wasioto & Black Diamond Ry., near Wasioto.

ELECTRIC RAILWAYS.

NEW YORK, N. Y.—The Board of Estimate and Apportionment on Dec. 24 passed a resolution granting a franchise to the South Shore Traction Co. to cross the Queensboro Bridge to the Manhattan terminus, and in Queens Borough, continuing by various streets to Jamaica. The board was enabled to take this action by the decision of the Appellate Division dissolving the injunction obtained by William T. Schieffelin, Pres., of the Citizens Union. Noted on July 22. Harold B. Weaver is Ch. Engr. of the South Shore Traction Co., Times Bldg., New York.

WHITE PLAINS, N. Y.—The Shore Line Electric Railroad Co. of New Rochelle Ry. Co., has been incorporated with a capital of $300,000. The corporation is a reorganization of the Tarrytown, White Plains & Mamaroneck, Ry. Co., whose property was sold several months ago under foreclosure to Franklin L. Babcock for $450,000. Among the directors of the new company are Franklin L. Babcock, Edward A. Maher, Reune Martin, Dudley Olcott and E. Francis Hyde, all of New York. Noted on Nov. 11.

PHOENIXVILLE, PA.—Official announcement is made that the Phoenixville, Valley Forge & Stafford St. Ry. Co. "has been chartered for the purpose of building a 10-mile electric railway from Phoenixville to Strafford, which is the terminus of the Philadelphia & Western Railroad's third-rail system. By the completion of this new line direct electric connection will be possible from Phoenixville to Philadelphia. The line will also pass through Valley Forge, William's Corner and King of Prussia. Later it is planned to extend to Bridgeport and Norristown. Application has been made for a charter, and as soon as it is granted the company proposes to start construction. A power plant and repair shop will be built at Valey Forge. Power will be furnished to towns along the route. Capital stock, authorized, $60,000; issued, $20,000. Thos. E. O'Connell, West Chester, Pres., Gen. Mgr. and Purchasing Agent; I. E. Miller, Phoenixville, Secy.; A. W. Kley, Phoenixville, Treas.; Nathan R. Rambo, West Chester, Ch. Engr." Noted last week.

BRANCHVILLE, MD.—The Washington, Spa Spring & Gretta Railroad Co., upon which work has preliminarily started on the Bladensburg road, is to extend a distance of about seven miles from Branchville, Md., to the intersection of 15th and H Sts., N. W., Washington, according to the Baltimore "Sun." The company building this line was organized under the laws of Maryland, and S. S. Yoder, of Baltimore, is its president. Under the act of Feb. 18, 1907, based on bills introduced by the late Senator William Pinkney Whyte and Representative Mudd, Congress granted the Spa Spring Co. to extend its line into the District, commencing construction before Feb. 18, 1908. Work was not started, and Senator Whyte, of Maryland, secured the passage by Congress of an amendment to the original act, so as to extend the time within which construction should be commenced to July 28, 1909. The company was then about to commence construction, but could not initiate the project before the date last mentioned, and another amendment of the original act was approved by President Roosevelt on March 3 last, based on a bill introduced by Senator John Walter Smith, extending the time within which construction should commence for six months and stipulating that cars must be in operation by March 3, 1910. The company has now given the contract for the construction of the first half of the road, including the entire District of Columbia portion, to a Chicago firm, which has subcontracted the work of building the first section of the road with the CRANFORD PAVING CO., of Baltimore. C. D. Eldridge is Pur. Agt., Natl. Metropolitan Bank Bldg., Washington.

EAST BEND, N. C.—The Yadkin River Valley Ry. Co. has been granted a franchise to build an electric railway in East Bend, Yadkin County. The proposed line is to be built from East Bend to Donnaha, a distance of five miles. It is probable that the line will be extended from Donnaha to Winston-Salem. The incorporators include W. A. Martin, George Steelman and J. W. Marler, of East Bend.

GREENVILLE, S. C.—The Greenville, Spartanburg & Anderson Ry. Co. will apply for a charter to build an electric railway from Greenville to Spartanburg, 31 miles. Charles W. Ellis, H. H. Prince and O. K. Mauldin are interested.

TALLULAH FALLS, GA.—Louis Magi, Tallulah Falls, is reported to be interested in a project to establish a 4-mile electric railway in Tallulah Falls.

MEMPHIS, TENN.—Bids are asked by the Lakeview Traction Co. until Jan. 5 for tracklaying on twelve miles of railroad from Memphis to Lakeview, Miss.; also for 1,025 lin. ft. of pile trestle work. Specifications may be obtained from W. W. Hayden, Ch. Engr., Memphis. Noted on Aug. 28.

GREENFIELD, IND.—The City Council has granted a franchise to Perry Fredman, of Richmond, Ind., and associates, to build an electric railway over certain street of Greenfield. A company, to be known as the Greenfield & Northern Ry. Co. will be organized to build the line, which is also to be extended to Pendleton, a distance of 16 miles, it is reported.

GOSHEN, IND.—The Toledo & Indiana Ry. will be again sold at public sale by the Receiver on Jan. 18, at 10.30, at the door of the Lucas County (Ohio) Court-house in Toledo. This is the line that is ultimately to be extended through Kendallville, Ligonier and Goshen. The outcome of the sale may determine how soon the road will reach Goshen. This line will connect with the Chicago, South Bend & Northern Indiana Ry. and the Winona Interurban Ry., at Goshen, giving a continuous belt line from Toledo and Fort Wayne to Chicago by way of South Bend and connection with a line south to Indianapolis. C. F. M. Niles is Receiver, 408 Superior St., Toledo, Ohio.

JOLIET, ILL.—The Chicago, Joliet & East St. Louis Electric Ry. Co. has been incorporated in Illinois to build and acquire electric lines over which electric cars may be operated from Chicago through Joliet to East St. Louis, with branches to Aurora, Ill., and Hammond, Ind. It is announced that the company will take over the operating lines of the Joliet & Southern Traction Co., the Joliet, Plainfield & Aurora R. R. Co., the Bloomington, Pontiac & Joliet Electric Ry. Co. and the Chicago, Joliet & Central Illinois Ry. Co. With existing tracks connecting Chicago Heights, near the Illinois-Indiana State line, south of Chicago, with Joliet and Aurora, it is planned to add a line south from Joliet to Dwight and there connect with the Bloomington, Pontiac & Joliet line in operation between Dwight and Pontiac. Also this latter line will be extended south from Pontiac to Bloomington, where connection will be made with the Illinois Traction System, extending west to Peoria, east to Decatur and Danville, and from Decatur through Springfield to St. Louis. The line from Joliet into Chicago may soon be constructed, and arrangements made for the use of the tracks of the Metropolitan West Side Elevated Railway for entrance into the business district. Capital stock, $100,000. Headquarters, Woman's Temple Bldg., Chicago. Incorporators, H. A. Fisher, F. E. Fisher and L. D. Fisher, S. A. Spray, of Chicago, and T. B. Steward, John A. Raymond and John H. Newhall, of Aurora, Ill.

MARION, ILL.—John Murphy, of Eldorado, Ill., is reported to be promoting a company to build a traction line from Marion, Ill., to Mount Vernon, Ind.

LA CROSSE, WIS.—The Common Council has granted to the La Cross & Winona Traction Co. a 50-year franchise for an electric railway in La Crosse. The company proposes to build an electric railway from Winona to La Crosse, via Galesville. W. J. Ferris is Pres.

DES MOINES, IOWA.—The Des Moines, Council Bluffs & Western Ry. Co. has plans under way for the construction of its interurban railway, which is to extend from Des Moines to Council Bluffs, via Adel and Greenfield. Headquarters, 408 Flynn Block, Des Moines. Capital stock authorized, $7,500,000; issued, $100,000. Bonds authorized, $3,000,000. Robert Palmer, Norwalk, is Pres.; H. A. Smith, Des Moines, Secy.; T. F. Flynn, Des Moines, Gen. Mgr.; F. N. Carrs, Des Moines, Ch. Engr.

IOWA CITY, IOWA.—We are officially advised that the Iowa City, Ottumwa and Southwestern Elec. Ry. Co. has just completed a survey and secured right-of-way for its electric line between Iowa City and Ottumwa, Iowa. This road will be 69 miles long and will pass through a fertile part of the state and tap a country heretofore somewhat remote from railroads. Noted on Dec. 16.

DAVENPORT, IOWA.—At a meeting of the Davenport & Manchester Interurban Ry. Co. on Dec. 14, at Monticello, Iowa, an increase of the capital stock from $15,000 to $650,000 was voted and a tentative decision arrived at to begin construction of the line in the spring. A report was heard from an engineer who has made a preliminary survey and estimates of the cost, together with the probable income. The officers of the company are L. S. Matthews, Monticello, Pres.; J. H. Vorhees, Monticello, Vice-Pres.; F. W. Rank, Moline, Secy., and T. F. Halligan, Davenport, Treas. Noted on Dec. 16.

ABILENE, KAN.—A meeting of representatives from Newton, Abilene and Salina, with J. C. Nicholson, of Newton, Chn., and J. E. Brewer, of Abilene, Secy., was held recently to organize the Central Kansas Interurban Railway Co., to build a gasoline motor line connecting the three cities. Committees on Charter and Constitution were named. C. B. Kirtian, of Salina, was made temporary treasurer. Directors will be elected and charter secured immediately.

SAN ANTONIO, TEX.—Plans are being matured for an extensive interurban system covering a large part of Texas, radiating from San Antonio north through Austin to Dallas and Fort Worth, according to local press reports. The backers of the project are C. L. Hodges, of Chicago, and L. L. McSweeney, of New York. Mr. Hodges, in speaking of the project, said: "Surveys for the new interurban have been made from San Antonio to Fort Worth, a distance of 250 miles. The line north will run through New Braunfels, San Marcos, Austin, Hillsboro, and thence to Dallas and Forth Worth. We expect to arrange to use the street car tracks of standard gage in all the cities through which we pass. This will save building many miles of track. Our power houses will be located every 20 miles along the route. Water power will be used everywhere it is possible. We expect to incorporate in Austin for $1,500,000. Eventually we expect to build east and south, to Houston and Galveston."

ARDMORE, OKLA.—The Arbuckle & Western R. R. Co. has been organized to build a railway, to be operated by steam and electricity, from Ardmore to Chickasha and Comanche. Incorporation papers will be filed soon. It is the intention of the company to begin the preliminary work about Jan. 1. Oscar Ayres, Ardmore, is interested.

TACOMA, WASH.—The Thunder Creek Transportation & Smelting Co., Bankers' Trust Bldg., Tacoma, proposes to commence construction work next spring on its projected 150-mile electric railway which is to connect cities and towns of northern central Washington and Puget Sound. Plans are under way for the consolidation of this company with the North Coast Mining & Milling Co., and the absorption of certain other properties, now under active development, into a new corporation known as the Skagit, Cascade & Chelan Ry. A. M. Richards is Pres. Noted on Oct. 28.

MONTESANO, WASH.—The County Commissioners have granted a 50-year franchise to Eldredge Wheeler for the construction of an electric railway from Moclips, Chehalis County, to Gate, Thurston County.

EUREKA, CAL.—Preliminary surveys for the Humboldt & Eastern R. R. between Eureka and Redding have been completed and

the line located. It is not probable that work will be started until next year. E. E. Skinner is Secy., 318 Fifth St., Eureka.

GUADALAJARA, MEXICO.—Estimates of the cost of constructing an electric railroad from Guadalajara to the town of Chapala have been prepared by engineers of the Chapala Hydro-Electric & Irrigation Co., and these will be forwarded to Mexico City for consideration by the directors of the company there. Several surveys have been made, and it is possible the company may undertake the construction of the line during the coming year. It would have a length of 52 kilometers, and the estimates place the cost at $1,200,000. If the line is built, it will connect with the company's local tramway system at the suburban town of San Pedro. A. Corffier is Ch. Engr., Guadalajara, State of Jalisco, Mex.

LIGHT AND POWER PLANTS.

(denotes that this work is advertised in Engineering News.)*

FORT WILLIAMS (Cape Cottage post-office), ME.—Bids are asked until 10 a. m., Jan. 20, by Capt. C. F. Humphrey, Jr., Constructing Q. M., U. S. A., 655 Congress St., Portland, for the construction and remodeling of an electric lighting system here. Plans, specifications, etc., are on file at the office of the Chief Quartermaster, Department of the East, Governor's Island, N. Y., and in office of Constructing Quartermaster, 263 Summer St., Boston, Mass. Plans, specifications, blank forms for proposals, etc., furnished on application.

HARTFORD, CONN.—The capital stock of the Manila Electric R. R. & Lighting Corporation of Hartford has increased its capital stock from $6,000,000 to $8,000,000.

NEW YORK, N. Y.—Bids are asked by the Board of Trustees, Bellevue and Allied Hospitals Department until 3 p. m., Jan. 7, for all labor and materials required for the furnishing and installing electric and gas lighting fixtures in the Pathological Department and Male Dormitory of the new Bellevue Hospital, situated on First Ave. and bounded by 26th and 29th Sts., Boro. of Manhattan.

PERTH AMBOY, N. J.—The PUBLIC SERVICE CORPORATION, Farley Osgood, Gen. Supt., Newark, N. J., was awarded contract on Dec. 20 by the Board of Aldermen for lighting the streets of the city with 250 or more lamps for five years, from Jan. 1, 1910, at $80 per lamp.

PLAINFIELD, N. J.—The Board of Governors of the Muhlenberg Hospital are contemplating the installation of a lighting plant. Estimated cost, $4,000.

MERCER, PA.—Contract for the equipment for the new power-house at the court-house here has been let to the AMERICAN HEATING, VENTILATING & SUPPLY CO., 735 Penn Ave., Pittsburg, Pa., at $19,918.

ROANOKE, VA.—The State Corporation Commission has issued a charter to the Roanoke Electric Light & Power Co. Capital stock, $1,000,000. This concern will dam the rapids in the river at Brooneal and convert the power into electricity. Alexandria M. Coffman is Pres., Woodstock, Va.

*RICHMOND, VA.—Bids, in duplicate, will be received at the office of E. E. Davis, Supt. Water Dept., by the Committee on Water until 4 p. m., Jan. 14, for furnishing the material and performing the work of constructing electric transmission lines described in plans and specifications on file in the above office.

STAUNTON, VA.—The Trustees of the Virginia School for Deaf and Blind have decided to petition the Legislature for an appropriation to install an electric light plant. Estimated cost, $10,000.

BERKELEY SPRINGS, W. VA.—The Cacapon Power Co. has just closed a deal with William Crosfield for a 5-acre lot adjoining Berkeley Springs on which they will work for the supply of additional power to their plant. Estimated cost, including machinery, ground, etc., $100,000. F. R. Reed, of Berkeley Springs, is Pres.

WILLIAMSON, W. VA.—Application has been made to the City Council by Captain E. L. Bailey for a franchise to install and operate an electric light and power plant at his mine, and to furnish electrical service here.

MILLVILLE, W. VA.—P. O. Keilholtz, 615 Continental Bldg., Baltimore, Md., Consulting Engr., has been engaged by the Winchester & Washington Ry. Co.. of Winchester, Va., to prepare plans and superintend the construction of its steam plant here, which is to be used as an auxiliary to its hydroelectric power plant. It is proposed to install a 2,200-volt, 3-phase, 60-cycle plant with an output of 1,500 KW. to furnish electricity for light and power purposes; also for distribution through Jefferson and Berkeley counties, West Virginia, and Clarke and Frederick counties, Virginia.

ROXBORO, N. C.—The Roxboro Cotton Mills will shortly erect a steam power plant. Contract has been awarded for the electric machinery to the GENERAL ELECTRIC CO., of Schenectady, N. Y. A 100-HP. engine has also been contracted for directly connected to a 75-KW. generator.

WAYCROSS, GA.—The Waycross Electric Light & Power Co. on Dec. 16 sold its holdings to Burdett Loomis and associates at $75,000. The sale includes the ice plant of the company as well as about six acres of city real estate. The new company will take charge of the plant on Jan. 1 and will at once begin the erection of an entirely new plant. The old light plant will be used only long enough to complete the new one.

SAVANNAH, GA.—A charter was granted in the Superior Court on Dec. 11 to the Edisto River Electric Power Co. for a period of 20 years for the purpose of conducting a business in water power, real estate, and various other projects. The incorporators are: D. G. Zeigler, Isadore H. Platshek, and George H. Miller. Capital, $1,000,000. George H. Miller is Att'y.

ATHENS, GA.—See item under Manufacturing Plants.

GREENVILLE, GA.—Bids will be received by the Mayor and Council until Jan. 4 for the purchase of bonds for $30,000, $8,000 of which will be used for the construction of an electric light plant and $16,000 for waterworks, and the remainder for sewer system. C. R. Williams is Mayor.

BRIDGEPORT, ALA.—This city will have an electric light plant. W. G. Scarborough, Elec. Engr., has formed a stock company to install and operate the light plant, and will have direct charge of the plant. Actual work on installation of the machinery will soon begin and the plant is expected to be in operation by Feb. 1, 1910.

MACON, MISS.—Bids will received by the city at the office of the Board of Mayor and Aldermen until 7 p. m., Jan. 17, for furnishing machinery and supplies only in connection with the improvement of the city light and water plant in accordance with specifications to be had at the office of the Board. Bids will be asked on the following items: Compound high-speed engine, two 2,300-volt, 3-phase generators and exciters, three 2,300-volt 3-phase vertical motors, one 3-panel switchboard and instruments, series street lights, three vertical turbine pumps, feed water pump, closed feed-water heater, ejector condenser and check valve, vacuum release and back pressure valve, vacuum oil separator and trap, steam separators and traps, smoke stack pipe, valves and fittings, pipe covering, and miscellaneous supplies. G. B. Baskerville, Macon, is Engr.

CROWLEY, LA.—See item under Water Supply—Irrigation.

ERWIN, TENN.—See item under Manufacturing Plants.

EVANSVILLE, IND.—The Evansville Public Service Co. has selected a site on Sixth and Canal Sts. on which to erect a central heating and electric light plant. Bids for construction and equipment of the plant will be asked soon.

FORT WAYNE, IND.—The Board of Public Works has awarded contract to the P. K. ENGINEERING CO., 308 South Eighth St., St. Louis, Mo., for the installation of a 425-HP. Lyons safety boiler in the municipal light plant, at $6,250.

CHESANING, MICH.—The Town Council is contemplating erecting a hydroelectric plant on the Shiwassee River for furnishing electricity to operate the municipal light plant and water-works system.

KANKAKEE, ILL.—Power from a dam to be constructed on the Wallie Warner farm, midway between Kankakee and Wilmington, may be used to furnish electricity for a Joliet-Wilmington end of the Joliet-Kankakee end of the Joliet-Kankakee electric line now proposed. A franchise will be petitioned for from the City Council of Kankakee to supply the city and commercial industries with electricity.

RACINE, WIS.—A central heating and power plant will be constructed next year for the various Case interests, including threshing machine, plow, implement and machinery companies of that name. Estimated cost, $50,000.

MINNEAPOLIS, MINN.—The City Councils of Minneapolis and St. Paul have adopted resolutions pledging the payment of the $300,000 necessary for the construction of an additional 15 ft. on the lower Government dam just above the Soldiers' Home, amount to be shared equally by the two cities. It is proposed to raise the dam from 15 to 30 ft. The Government engineers estimate that 15,000 HP. can be generated, the power to be disposed of between the two cities, the Government reserving 1,000 HP. to supply Fort Snelling and the Federal buildings in St. Paul. Plans have not been made as yet for distributing or utilizing the power.

MARBLE, MINN.—Alice St., the main thoroughfare of Marble, is to be illuminated. An arrangement has been effected between the Village Council and the OLIVER IRON MINING CO. whereby the latter is to furnish the power from its local plant. Three arc lights will be hung and the concrete posts will be lighted. G. M. Miles, Electrician for the Oliver Co., will have charge of the work.

HATFIELD, MINN.—The third dam of the La Crosse Water Power Co. will be built on the east fork of the Black River about five miles from the main dam here.

ST. PAUL, MINN.—The Consumers' Power Co., of Stillwater, Minn., has filed articles of incorporation with the Secretary of State with a capital of $10,000,000. Archie S. Huey is President; R. J. Graff, Secretary. The company has purchased the present lighting plant at Stillwater and will make extensive improvements and additions. A new power plant will be constructed at Apple River, Wis, while the adjoining towns of Hudson, White Bear, South Stillwater and North St. Paul will be included in the new concern's operations.

MARION, KAN.—See item under Water Supply—Irrigation.

HAMILTON, MONT.—Plans are being made by the Hamilton Light & Water Co. for the construction of a hydroelectric plant to furnish electricity in Hamilton. Contracts for the work will be awarded as soon as plans and specifications are completed. The plant will be located on Sleeping Child Creek about six miles from here. Estimated cost, about $150,000. From 1,500 to 2,000 HP. will be developed. W. O. Fisk is interested.

PARGOULD, ARK.—The Crystal Light & Ice Co. has been granted a 20-year franchise and contemplates improvements to its electric light plant. Estimated cost, about $20,000.

LITTLE ROCK, ARK.—The City Council has engaged J. F. Jackson, of the Westinghouse Electric & Mfg. Co. East Pittsburg, Pa., to estimate the cost of the proposed municipal electric light plant here. E. A. Kingsley is City Engr.

LA SALLE, COLO.—Plans are being made for electric service here in anticipation of the extension of the transmission lines of the Home Electric Lighting Co., of Greeley, which are being constructed to Evans. The line will be operated at 6,600 volts for the present, supplying both La Salle and Evans.

OROVILLE, CAL.—The Board of Supervisors has passed ordinance granting a franchise to the Sacramento Valley Power Co. to furnish electricity here.

CLOVERDALE, CAL.—The Board of Supervisors has granted a franchise to the Cloverdale Light & Power Co. to distribute electricity for lamps and motors over the northern section of the county. Work on the plant will begin soon.

COALVILLE, UTAH.—Application has been filed with Caleb Tanner, State Engr., by Moses W. Taylor, of Coalville, for permission to appropriate 20 cu. ft. per second of water from Chalk Creek, Summit County, to generate electricity for transmission to various towns in Utah. The water will be carried through a ditch 18,000 ft. in length.

SALT LAKE CITY, UTAH.—Application has been made to Caleb Tanner, State Engr., by L. B. McCornick for 15 cu. ft. of water from Hard Scrabble Creek, Morgan County, to generate electricity for lighting purposes. The application specifies a dam and a channel 6,600 ft. in length, the water wheels to operate under a head of 105 ft. and develop 140 HP.

KOOSKIA, IDAHO.—Contract for the construction of the large concrete dam across the middle fork of the Clearwater River at Kooskia has been awarded to GATES & RODGERS, of Spokane, Wash. It is estimated that the improvements, consisting of the dam, power plant, cement factory and saw power plant will cost about $1,500,000, and that the company plans to make the investment within the next 18 months.

TORONTO, ONT.—Milton, Toronto Township, Port Credit, Mimico and Brampton, all in Ontario, have made application to the Hydro-Electric Power Commission for electricity. If the service is furnished another transformer station will be established.

*WINNIPEG, MAN.—Bids are asked by the Chairman of the Board of Control at the office of M. Peterson, Secy., until 11 a. m., Feb. 15, for the supply and erection of the various portions of the equipment for the terminal station at Winnipeg and for the turbine governors and gate valves for the generating station, Point du Bois Hydro-electric Development. For details see advertisement in this issue.

SASKATOON, SASK.—The Saskatchewan Power Co. has offered to supply the city with power at less than $30 per HP. per year with a 24-hour service.

BRIDGES.

(denotes that this work is advertised in Engineering News.)*

BOSTON, MASS.—WILLIAM HELLIS, 18 Tremont St., Boston, has been awarded contract at $6,429, for repairing the Western Ave. bridge between Boston and Cambridge.

NIAGARA FALLS, N. Y.—The Grade Crossing Commission has approved plans and specifications for rebuilding the Eleventh St. bridge over the New York Central R. R. tracks at the North End. Estimated cost, $75,000.

NEW YORK, N. Y.—We are officially advised that LAFFERTY & WEIR, 723 Lexington Ave., New York, have been awarded contract by T. W. Stevenson, Comr. of Bridges, for the construction of a steel and timber trestle at the Kent Ave. bridge, over Bushwick Creek, Boro. Brooklyn. Bids were opened on Dec. 14.

ROME, N. Y.—LAY & WALPOLE, Oswego, N. Y., have been awarded contract by the Board of Public Works at $6,020, for the construction of the new steel bridge over the Mohawk River at the proposed extension of East Bloomfield St. The bridge is to have a span of 125 ft., a 24-ft. roadway with 7-ft. walks on either side. List of bidders noted on Dec. 16.

SOMERS POINT, N. J.—We are officially advised that nothing has been done in regard to the construction of the proposed steel bridge across Crest Egg Harbor Bay between here and Beasley's Point. The matter has been laid over for the present. E. D. Rightmire is County Engr. Noted on Dec. 16.

RISING SUN, MD.—The State Roads Commission, J. M. Tucker, Chn., Union Trust Bldg., Baltimore, contemplates the construction of a bridge near here; two 36-ft. spans, reinforced concrete. Walter W. Crosby is Ch. Engr., Johns Hopkins University, Baltimore.

PORTSMOUTH, VA.—This city will construct three reinforced concrete bridges during the year 1910. Bascom Sykes is City Engr.

ST. PETERSBURG, FLA.—The County Commissioners of Hillsboro County are considering the construction of a bridge across Four-mile Bayou.

NEW ORLEANS, LA.—The City Council has awarded contract for constructing a bridge over the New Basin Canal at Galvez St. to the PENN BRIDGE CO., of Beaver Falls, Pa., at $14,980, and for removing and re-erecting the existing bridge on Carrollton Ave. over the Mobile Canal to Louisiana Ave. to MUIR & FROMHERZ, 211 Camp St.

BRISTOL, TENN.—The city contemplates the construction of an iron bridge about 65 ft. wide across Beaver Creek at Front St.

WEST UNION, OHIO.—Bids are asked until noon, Jan. 17, by the County Auditor, for the superstructure of a steel bridge with concrete floor. E. C. Zimmerman is County Surv.

CINCINNATI, OHIO.—Bids will be received by the Board and Director of Public Service until Dec. 31 for furnishing the necessary labor and materials for the improvement of Harrison Ave., viaduct, [illegible] of a stairway to Harriso[illegible] Western to Harrison A[illegible] with the remodeling of [illegible] walks.

YOUNGSTOWN, OHIO [illegible] viaduct to be built by th[illegible] & Tube Co., Federal Bldg. [illegible] the south side of the M[illegible] been awarded the PENN [illegible] Beaver Falls, Pa. Estima[illegible] cost, $40,000.

*MONROEVILLE, OHIO [illegible] by the County Commissio[illegible] til 10.30 a. m., Jan. 24, [illegible] erecting a steel riveted [illegible] Huron River at Monroevill[illegible] St. bridge. Length, 204 [illegible] two spans each 82 ft., and [illegible] roadway, 20 ft., with side[illegible] 4 ft. wide. Fay E. Smith [illegible]

TOLEDO, OHIO.—The P[illegible] Co., of Troy, N. Y., will pr[illegible] ed contract by the city for [illegible] of the new Cherry St. brid[illegible]

DETROIT, MICH.—The [illegible] Steel Works has filed artic[illegible] tion to do steel bridge [illegible] structural work of all kinds [illegible] $200,000, of which $150,000 [illegible] incorporators are Henry [illegible] J. L. Towler, Richard P. [illegible] Brinkerhoff, Alex. McPherson [illegible] P. Hamilton.

CHICAGO, ILL.—John J. [illegible] Pub. Wks., let contract on [illegible] ROEMHELD CONSTRUCTION CO., 71 La-Salle St., Chicago, for repairing the Madison St. bridge, at $25,573. Work is to be completed within 30 days.

SIOUX CITY, IOWA.—The City Council has ordered four steel bridges constructed over Perry Creek to replace pile bridges and three steel bridges rebuilt. The city buys the plate girders locally and asks bids for erection only. G. Y. Skeels is City Engr.

FORT DODGE, IOWA.—Plans and specifications have been prepared and submitted to the City Council for the construction of a viaduct at South Third St. Estimated cost, $30,000.

MANHATTAN, KAN.—The Union Pacific Ry. Co. will probably construct a steel bridge over the Blue River cut-off channel.

GENEVA, NEB.—Bids will be received until Jan. 11 by Uriah F. Stanard, County Clk., for furnishing material and erecting all county bridges during the year beginning Jan. 11, 1910.

WAYNE, NEB.—We are officially advised that the STANDARD CONSTRUCTION CO., of Omaha, Neb., has been awarded contract by the County Commissioners for constructing and repairing all county bridges for the year 1910. Bids were opened on Dec. 21. Charles W. Reynolds is County Clk.

LINTON, N. DAK.—Bids are asked by the Emmons County Commissioners until 1 p. m., Jan. 4, for the construction of a steel bridge across Devil's Gulch, Section 6, Township 135, Range 78, 18 ft. above low water, bridge to be 5-panel riveted truss, 65 ft. long, 16 ft. roadway. Foundation, five 8-in. I-beam steel piles, with concrete backing, 12 ins. thick; joists, 8 lines of 9-in. I-beams; wheel guard, 4 x 6 ins.; also, for the construction of an angle rail, I-beam, leg steel bridge across Sand Creek, northwest one-quarter of Section 28, Township 133, Range 77, 24 ft. long, 16 ft. roadway, 10 ft. above low water, concrete backing, 10 ins. thick. Joists, 8 lines of 10-in. steel (6 I-beams and 2 channel), wheel guard 4 x 6 ins.

GOLIAD, TEX.—Goliad and Bee Counties have awarded contract to J. J. GREATHOUSE of Goliad, at $3,559 for constructing a bridge across Blanco Creek.

SAN ANTONIO, TEX.—The Bexar County Commissioners have adopted plans and specifications prepared by Terrell Bartlett of San Antonio for the construction of a reinforced concrete arch bridge across Medina River at Pleasanton road crossing. The structure will consist of two 110-ft. spans and two 30-ft. spans, carrying 18-ft. roadway and will contain 850 cu. yds. of reinforced concrete and 1,000 cu. yds. of rubble concrete. Bids are asked until Jan. 20. Estimated cost, $22,000.

BEEVILLE, TEX.—We are officially advised that the County has awarded contract to the OTTUMWA BRIDGE CO., E. P. Alsbury & Sons, Agts., Houston, Tex., for the construction of a steel bridge over Aransas Creek. Bids were opened on Dec. 16. Dan Troy is County Clk., Beeville.

WAGONER, OKLA.—Bids are asked by J. E. Hildt, County Clk., Wagoner County, until 10 a. m., Jan. 18, for the erection of a steel bridge, 340 ft. long, on tubular foundations, on the county road at Mingo Ferry.

LAMAR, WASH.—Bids will be received until Jan. 4 by the Board of County Commissioners at Walla Walla, for constructing a bridge, to have two spans of 100 ft. each on concrete pier and abutments, with retaining walls, across the Touchet River at the Harve Shaw crossing, near here. Alternate bids will be received for a wooden Howe truss bridge and a steel bridge. J. N. McCaw is County Audr.

TACOMA, WASH.—We are officially advised that the lowest bid received on Dec. 15 by H. J. McGregor, Comr. Pub. Wks., for the construction of a reinforced concrete viaduct over the gulch, between Fife and Oakes Sts. on line of N. 23d St., was that of the Wells Construction Co., at $43,280.

PORTLAND, ORE.—Bids will be received at the office of the City Auditor, until 4 p. m., Jan. 14, for furnishing all material and building a steel viaduct over Sullivan's Gulch on East Twelfth St. The viaduct will be composed of six 32-ft. and two 64-ft. deck plate girder spans which are supported on steel bents, concrete pedestals, and concrete abutments, and will provide a roadway 40 ft. wide and two sidewalks each ten feet wide. Specifications may be obtained from the City Engineer or from Waddell & Harrington, Consulting Engrs., 608 New Nelson Bldg., Kansas City, Mo.

BUILDINGS.

BOSTON, MASS.—A school building will be built in the First Section of East Boston, plans having been approved by the Boston School House Commission. It will be built on Chester and Brigham Sts., will be three stories high and front 148 ft. on Webster St. There will be twelve classrooms, while on the first floor there will be an assembly hall 75 x 85 ft., with a stage 34 x 15 ft. In the basement will be two classrooms. The building will be fireproof, with stairways at both ends. The principal entrance will be from Webster St., through two porches lighted by ornamental glass. The school is designed to accommodate about 900 children. It will be built of red brick and sandstone and will be L-shape. Brigham, Coveney & Bisbee, 184 Boylston St., Boston, Mass., are Archs.

Plans for an annex to the Girls' High School building on West Newton St., to occupy the lot in Pembroke St., adjoining the rear entrance to the school, have been drawn, and bids will be asked at once. The building will be constructed of brick and stone and will contain eight classrooms. Besides these, will be a gymnasium 100 x 50 ft., and a dining-room for the scholars. The building will be four stories high, with a frontage on Pembroke St.

SPRINGFIELD, MASS.—Bids were received by the Municipal Building Commission in the Common Council Room, Municipal Building, Pynchon St., Springfield, on Dec. 22, for Contract No. 2, being the excavation, mason work, cutstone, structural steel, fireproofing, roofing, ornamental iron, plastering, mosaic and tile floors, interior stone and marble, carpentry and finishing, vaults and elevators for the auditorium, tower and passage, municipal office building and terrace and steps of the municipal buildings to be erected by the city of Springfield in Court St. facing Court St. Pell & Corbett are Archs., 122 East 25th St., New York, George D. Pratt is Chn. Bldg. Com. Following is a summary of the lowest bids received by the Municipal Building Commission for the main construction work on the city group, according to the Springfield "Republican": Contract No. 2. To build whole group immediately, Oscawana Bldg. Co. of New York, $877,000; to build group in 18 months, Oscawana Bldg. Co., New York, $917,000; A. E. Stephens Co., of Binghamton, N. Y., $904,275; to build auditorium alone, Horton & Hemenway, 683 Atlantic Ave., Boston, $338,406; to build clock tower alone, A. E. Stephens Co., $120,000; to build municipal building alone immediately, Cramp & Co., Commonwealth Bldg., Philadelphia, and New York, $374,655; to build municipal building in 18 months, Cramp & Co., $399,655; to build auditorium and tower combined, Horton & Hemenway, of Boston, $478,406; to build steps and terraces, Conners Bros., of Lowell, $12,820.

The total figures for Contract 2 (immediate delivery) of the nine different bidders are as follows: Oscawana Bldg. Co., of New York, $877,000; Cramp & Co., of Philadelphia and New York, $891,642; A. E. Stephens Co., of Binghamton, N. Y., $895,775; Horton & Hemenway, of Boston, $889,406; Casper Ranger, of Holyoke, Mass., $927,000; Woodbury & Leighton, 166 Devonshire St., Boston, $930,641; Conners Bros., of Lowell, $953,400; Norcross Bros., of Worcester, $957,000; J. E. & A. L. Pennock, Land Title Bldg., Philadelphia (builders of the new public library), $989,400. The work on the auditorium and tower may begin as soon as Horton & Hemenway have finished on the foundations for these two structures, but the municipal building cannot be started until the rest of the site is cleared of the police and fire buildings. The lowest bid on the main construction work is $877,000 for immediate delivery of the site, and for delivery in 18 months the lowest bid is $904,275. The lowest combination bid for this work is $854,881, made up as follows: Auditorium, Horton & Hemenway, $338,406; clock tower, A. E. Stephens Co., $129,000; municipal building, Cramp & Co., 374,655, and steps and terraces, Conners Bros., $12,820. The Cramp Co., stipulates that if it build the municipal office building in 18 months, and that is when it would build it if at all, they would ask $25,000 more, making their figures $399,655, and the total for the combination, $879,881.

The low bid on Contract No. 3, for installing the heating and ventilating apparatus of the whole group, was submitted by James P. Dwyer, 25 Cambria St., Boston, his figures being $39,390. Lowest separate bids were as follows: Auditorium alone, James P. Dwyer, $22,891; clock tower alone, James P. Dwyer, $335; municipal building, C. H. Sanborn, of Boston, $15,351. The total bid of this combination is $38,078, as compared with the bid of Mr. Dwyer on the whole, $39,390.

The low bid on Contract No. 4, for installing electrical work in the group, was submitted by the M. B. Foster Electrical Co., 54 Batterymarch St., Boston, at $22,382. Lowest separate bids were as follows: Auditorium, M. B. Foster Co., $8,918; clock tower, Alfred J. Hixon, of Boston, $3,595; municipal building, Edward C. Lewis, of Boston, $9,122. The total bid of this combination is $21,635, as compared with the bid of Mr. Foster for the whole contract of $22,382.

The low bid on Contract No. 5, for installing the plumbing for the group, was submitted by William H. Mitchell & Sons Co., 1 Province Court, Boston, $36,575. Lowest separate bids were as follows: Auditorium, William H. Mitchell & Sons Co., $14,950; clock tower, J. J. Cottar of Springfield, $500; municipal building, Pierce & Cox, of Boston, $19,977. This combination totals $35,427, as compared with the bid of Mitchell & Sons Co., of $36,575.

NEW YORK, N. Y.—Bids are asked by John W. Brannan, Pres. Bd. of Trustees, Bellevue and Allied Hospitals, until 3 p. m., Jan. 7, for all labor and material required for the erection and completion of a temporary office building and the alteration of the Registrar's office.

Plans have been filed for a 12-story fireproof loft building to be erected from designs by Schwartz & Gross, Archs., 347 Fifth Ave., at the southwest corner of Madison Ave. and 28th St. It will be of brick with limestone trimmings, having a frontage of 49.5 ft. and a depth of 95 ft., and is to cost $350,000. George Becker is the owner of record.

A 4-story and basement private residence is to be built at 46 Park Ave. from designs by Francis G. Stewart for E. W. Sheldon, 45 Wall St. It is to be 24 ft. front and 65½ ft. deep, of brick, trimmed with granite and limestone, and is to cost about $50,000.

C. B. Meyers, Arch., 1 Union Sq., has plans for a 7-story loft building, with ground floor stores, to be built for the Charles L. Weinstein Realty Co., on the south side of 26th St., 350 ft. west of Sixth Ave., at a cost of $40,000.

W. Albert Swasery, Arch., 47 West 34th St., has filed plans for a theater and studio building to be erected for J. J. Shubert at 217 to 233 West 43d St., directly opposite the Lyric Theater on a plot, part of which was occupied by a small sanatorium. It is to be of brick with terra-cotta trimmings of a chaste Florentine Renaissance design, having a frontage of 64 ft. and a depth of 92 ft. The theater will have three stories, with a seating capacity of 732, and on the front of the plot will be studios and offices seven stories high. The building is to cost $150,000.

NEW YORK, N. Y.—The W. Axelrod Realty Co. has filed plans for the erection of an 8-story apartment house, to contain suites for 36 families and to cost $200,000, which is to be erected on the south side of 100th St., west of West End Ave. The plans were made by George F. Pelham, 507 Fifth Ave. The building will have a frontage of 80 ft. The plot is part of the Furniss Estate.

A group of eight 6-story flat houses is to be built on the north side of 124th St., east of Amsterdam Ave., for the Speedway Realty Co. from designs made by C. B. Meyers, 1 Union Sq. They will cost $310,000.

Preliminary plans are being prepared by Goldwin, Starrett & Van Vleck for the commercial structure to be erected by Mills & Gibb, 462 Broadway, on the site of the Fourth Ave. Presbyterian Church, northwest corner of 22d St., purchased recently for $680,000. The building is to be a 14-story, basement and sub-basement structure of granite, terra cotta and brick, for the exclusive occupancy of the firm.

C. B. J. Snyder, Supt. of School Bldgs., Dept. of Education, has filed plans for enlarging Public School No. 132, on Wadsworth Ave., from 182d to 183d St., by the addition of a 4-story extension, 185 ft. long and 43 ft. deep, which will be separated from the main structure by a 1-story wide covered corridor. The addition is to cost the city $105,000.

Designs have been approved by the Municipal Art Commission for a group of buildings forming part of the new Bellevue Hospital, at an estimated cost of $2,750,000. This group of buildings will consist of two surgical pavilions, a building for operating rooms, surgical wards and rooms for the house staff, and an extension to the laundry building, with storerooms. This group of buildings will be erected on the block bounded by First Ave., East 26th St., East 29th St. and the East River.

The Commission also approved designs for a wing to be added to the present building of the Girls' High School, Nostrand Ave. and Halsey St., Brooklyn, to cost $90,000; designs for Public School Building No. 46, in the Bronx, containing an auditorium and to be erected at Bainbridge and Briggs Aves. and 196th St., at a cost of $290,000.

NEW YORK, N. Y.—Bids are asked by C. B. J. Snyder, Supt. of School Bldgs., Dept. of Education, until 3 p. m., Jan. 10, (1) for fireproof stairways, etc., at Public Schools Nos. 16, 34 and 62, Boro. of Brooklyn; (2) for fireproof stairways, etc., at Public Schools Nos. 36, 43, 51 and 59, Boro. of Brooklyn; (3) for the erection of partitions forming classrooms, etc., at Public School No. 125, Blake, Rockaway and Thatford Aves., Boro. of Brooklyn; (4) for the general construction, etc., of additions to and alterations in Public School No. 78, on northeast corner of Pleasant Ave. and East 119th St., Boro. of Manhattan; (5) for the general construction, etc., of additions to and alterations in Public School No. 58, on the southerly side of Grafton Ave., between Walker Ave. and Clinton Pl., Woodhaven, Boro. of Queens.

NEW YORK, N. Y.—Bids are asked until 2.30 p. m., Jan. 11, by Robert W. Hebberd, Comr. of Public Charities, for the excavation, masonry, steel and iron work, roofing and metal work, carpentry, plumbing work, heating work, electric work and all other work (except certain kitchen service and lighting fixtures and refrigerators) as set forth in the drawings and specifications for the construction and entire completion of a dormitory for female inamtes at the New York City Farm Colony, situated on the property of the Department of Public Charities, on the north side of the Manor Road, Township of Castleton, Boro. of Richmond, the City of New York.

LOCKPORT, N. Y.—The Board of Supervisors voted on Dec. 17 to purchase a site and erect an alms-house at a cost of $250,000.

The New York Central & Hudson River R. R. Co. will build a fireproof freight depot, 500 ft. in length, of brick and steel construction, between Bristol Ave. and Michigan St. The same company will build a passenger depot of brick at West Lockport. George W. Kittredge is Ch. Engr., Grand Central Station, New York.

NEW ROCHELLE, N. Y.—A school building is to be erected on Mayflower Ave., to cost about $80,000. William T. Towner, 320 Fifth Ave., New York, is Arch.

CENTRAL ISLIP, N. Y.—The bids received on Dec. 22 by the State Commission in Lunacy for the construction of six cottages for chronic patients at the State Hospital at Central Islip, N. Y., were: R. T. Ford, 206 South Ave., Rochester, N. Y., $278,000; H. Probst, 10 West 29th St., New York, $309,950; Westchester Engineering Co., 30 West 42d St., New York, $286,231; Ross-Busch Co., Marbridge Bldg., New York, $294,150; Joseph McArthur, 18 Ormond Pl., Brooklyn, N. Y., $316,374; Cramp & Co., 36 East 23d St., New York, $315,888; Bliss & Griffiths, 225 Fifth Ave., New York, $289,000; F. T. Nesbitt & Co., 116 Nassau St., New York, $361,373; A. Pasquini, 1123 Broadway, New York, $328,840; Daniel J. Ryan, 723 Third Ave., Brooklyn, N. Y., $310,800; Morris Kantrowitz, Albany, N. Y., $344,000; Peter Keeler Building Co., Albany, N. Y., $303,333. T. E. McGarr is Secy.; F. B. Ware, State Arch., the Capitol, Albany.

BUFFALO, N. Y.—The Park Department of the city of Buffalo, Charles Mosier, Pres., 1266 Seneca St., is having plans prepared for nine stone buildings with iron cages, etc., for housing animals. Estimated cost, $75,000.

The H. D. Taylor Co., Conrad E. Wettlanfer, Treas., 105 Oak St., has let the following contracts for a 3-story and basement warehouse, 66 x 75 ft., to be erected at 101 Oak St.: Masonry, B. L. CROOKER. 4 Builders' Ecxahnge; structural steel, BUFFALO STRUCTURAL STEEL CO.; carpentry, WILLIAM FENRICH'S SONS, 193 Spring St.

ERIE, PA.—L. J. Parmenter & Co., 1104½ State St., have plans in progress for a church, 80 x 116 ft., two stories, of brick, stone and structural iron, to be built by the Zion Lutheran Church, at the corner of Brown Ave. and Liberty St.

HOMESTEAD, PA.—Homestead Lodge, B. P. O. Elks, has decided to erect a $50,000 clubhouse. The lodge has purchased a plot with 75 ft. front in Ninth Ave., Homestead, and a committee has been appointed to arrange for the building. It includes W. L. McConegly, C. W. Ashley, Dr. C. C. Rinard, Charles Goeddell and Peter Fey. Plans for the club building will be prepared.

PHILADELPHIA, PA.—Watson, Huckel & Co., Archs., 1211 Walnut St., have completed plans and specifications and are receiving bids from contractors for the 10-story building to be erected by the estate of Henry C. Lea on the lot at the southeast corner of Broad and Spring Garden Sts., purchased by Henry C. Lea shortly before his death. As soon as the contract has been awarded the demolition of the old Odd Fellows' Hall, recently occupied by the city as a school, will be begun, and in its place will be erected a fireproof building, which will be arranged on the ground floor for either one or five stores, or for any intermediate number, as may prove desirable. The nine upper floors will be arranged for manufacturing tenants, and will be the full size of the lot, 53 x 100 ft., giving an area of about 5,000 sq. ft. to the floor, and as the girders will have a clear span there will be no posts in these floors. The building will be of steel and concrete, and will be equipped with passenger and freight elevators, steam heat and electric light and power. Further protection against fire will be given by a complete sprinkler system. It is expected it will be ready for occupancy about Sept. 1, 1910.

Bids were received on Dec. 21 by the Property Committee of the Board of Education for the construction of a fireproof elementary school-house, at 16th and Lombard Sts., with accommodations for 1,350 pupils. The structure will replace the Grant School, 17th and Pine Sts.; the Catto School, 20th and Lombard Sts., and the Ramsey School, Eleventh and Pine Sts., which will be sold and the proceeds used for further school improvements. The bids for the new building, which were ordered scheduled, were as follows: Charles B. McCaul & Co., Tenth and Sansom Sts., $184,494; Cramp & Co., Commonwealth Bldg., $185,668; David Peoples, Betz Bldg., $185,737; J. G. Doak & Co., $187,563; B. Ketcham's Son, $191,445; Mitchell Bros., $195,673. Proposals were opened also for the erection of two wings to the Pastorius Elementary School, Germantown, to provide additional accommodations for 400 pupils, and the contract was awarded to H. D. BATON, 1221 Arch St., for $53,460. The other bidders were T. J. Hurley, $56,453; Mitchell Bros., $56,900; Cramp & Co., $57,371, and John H. Jordan, $61,246.

It is announced that Henry Phipps will build for the University of Pennsylvania a $500,000 hospital for tuberculosis. He also will endow the hospital for an amount not stated, but it is believed it will be $500,000.

The John D. Allen Co., Arch., Betz Bldg., has finished plans and invited estimates for a theater to be erected on the west side of 42d St., south of Ludlow St., for the Greater Philadelphia Realty Co. It will be called the Nixon Theater. The plans provide for an entrance 20 x 65 ft., with an auditorium 95 x 100 ft. Those bidding are A. R. Raff, G. L. Sipps, A. F. Mowrey, Glenn & Co. and Havens & Co.

BALTIMORE, MD.—Bids will be received by the Board of Awards of Baltimore until 11 a. m., Jan. 5, for a building to be erected at the southeast corner of Edmondson Ave. and Bentalou St., Engine-house No. 36. Edward D. Preston is Inspector of Bldgs.

WASHINGTON, D. C.—We are officially advised that the District National Bank invited competitive plans recently from eight architects for their new 8-story bank building to be erected in G St. Milburn, Heister & Co., Home Life Bldg., Washington, Archs., were the successful competitors. They have been instructed to prepare the plans and specifications, and same will be done as soon as possible.

*FORT MONROE, VA.—Bids are asked until 10 a. m., Jan. 26, by Capt. Ernest R. Tilton, Constr. Q. M., for the alterations and repairs to old Artillery School building, at Ft. Monroe, Va., consisting of construction, repairs, heating, plumbing and electric wiring and fixtures.

*GOLDSBORO, N. C.—Bids are asked by James Knox Taylor, Supervy. Arch., Treasury Dept., Washington, D. C., until 3 p. m., Jan. 31, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring), of an extension, remodeling, etc., to the U. S. post-office at Goldsboro.

SHREVEPORT, LA.—Bids will be received by Building Committee of Board of Education of Caddo Parish, at the office of Edward F. Neild, Arch., Continental Bank Bldg., Shreveport, until Jan. 9, for erection of a 3-story and basement school building on site in Hope St., Shreveport, La. Cost, about $40,000.

MEMPHIS, TENN.—The Builders' Exchange Forum has undertaken to compile a partial list of the buildings which will be erected in Memphis during 1910, according to press reports, and it has issued a statement to the effect that $17,000,000 will be expended on buildings that are projected or that will be launched in a very short time. Among the more prominent buildings are the following: Union passenger station, $3,000,000; I. C. and 'Frisco passenger station, $3,000,000; Cotton Exchange, $1,250,000; Great Southern Insurance, $1,000,000; Tri-State Hospital, $500,000; Normal School, $500,000; Central Bank, $300,000; Milton Smith Hotel, $300,000; high school, $300,000; police station, $280,000; two Kalaher loft buildings, $200,000; Union stock yards, $150,000; three schools, $150,000; Huling St. wholesale grocery store, $125,000; Memphis Bag Co., $100,000; Bruce stock yards, $100,000. In addition to the foregoing it is assumed that $4,000,000 will be spent in new dwellings and that $1,000,000 will go toward the erection of other buildings.

CINCINNATI, OHIO.—The Director of Public Safety has announced to the Board of Control that he has decided upon the property at the northeast corner of Arch St. and Broadway as a site for the new Second district combination police and patrol house to take the place of the old Hammond St. station. There is a 3-story brick and stone house on the lot at present, and this will be torn down early in the spring, at which time the Director will advertise for bids for the construction of the new building. The tenants will be permitted to remain in the building until spring. The price to be paid for the site is $20,000. The property is owned by the Skinner estate. It fronts 53 ft. and 6 ins. in Broadway and extends back 117 ft. and 11 ins. The proposed building will cost near $60,000. The board confirmed the purchase of the site and authorized the Director to ask for bids for constructing the new building.

CLEVELAND, OHIO.—The property and building of the Y. M. C. A. have been sold to make room for the erection of a $2,000,000 hotel. H. H. Johnson, Citizens Bldg., arranged the sale. The new hotel will be named, it is said, the Ritz.

INDIANAPOLIS, IND.—The Trustees of the Red Cloud Lodge of Red Men have approved plans on which bids will be asked soon for the construction of a business and lodge hall building at the corner of Capital Ave. and North St. Estimated cost, $60,000.

CRAWFORDSVILLE, IND.—The Cleveland, Cincinnati, Chicago & St. Louis Ry. Co. has ordered plans and will ask for bids soon for the erection of a depot and freight station in this city. F. W. Smith, Cincinnati, Ohio, is Constr. Engr.

TERRE HAUTE, IND.—The Terre Haute, Indianapolis & Eastern Traction Co. has selected a site and ordered plans for the erection of an interurban terminal station and train sheds. The estimated cost is $250,000. T. H. Grover, Terre Haute, is Gen. Mgr.; H. E. Smith is Ch. Engr.

ROCK ISLAND, ILL.—Bids are asked until 3 p. m., Feb. 24, by James Knox Taylor, Superv. Arch., Treasury Dept., Washington, D. C., for the construction (including plumbing, heating, wiring, and standard clock systems), of the extension to the U. S. post-office at Rock Island..

PORT WASHINGTON, WIS.—The First National Bank will erect a banking house next spring, having purchased a site 60 x 120 ft.

MILWAUKEE, WIS.—H. C. Hengels, Arch., 207 Grand Ave., has awarded the mason contract on the proposed $150,000 theater and office building to be erected at First Ave., and Mitchell St. by the Juneau Theater Co., to S. WABISCZEWSKI; carpenter contract to C. A. SPRAGUE, Majestic Bldg.; interior woodwork, WISCONSIN CONSTRUCTION CO. It will be of steel and concrete construction, 120 x 125 ft., and five stories high.

RIPON, WIS.—Ripon College, F. W. Ericksen, Pres., has awarded the general contract for first section of $90,000 gymnasium to JOHN IMMEL, Fond du Lac, Wis.

STILLWATER, MINN.—Bids will be received by the Minnesota State Board of Control, State Capitol, St. Paul, Minn., until Feb. 7, for the erection and completion of new buildings and improvements for the Minnesota State Prison, at Oak Park, Stillwater, Minn., in accordance with drawings and specifications prepared by Clarence H. Johnston, Arch., 715 Manhattan Bldg., St. Paul, Minn., and Charles L. Pillsbury, Consult. Engr., 805 Metropolitan Life Bldg., Minneapolis, Minn. P. N. Ringdal is Chn. of Bd. Cost, $1,300,000.

ST. PAUL, MINN.—Plans have been prepared by Buechner & Orth, Archs., Manhattan Bldg., city, for the construction of a warehouse for the Patterson-Sargent Paint Co., Cleveland, Ohio, to be built on University Ave. and LaSalle St. It will be three stories high, of reinforced concrete fireproof construction, 90 x 180 ft., having steam, heating, electric lighting and electric elevator. Cost, $50,000.

ST. PAUL, MINN.—The Plymouth Congregational Church, Rev. C. C. Campbell, Pastor, contemplates the erection of a church at Summit Ave., and Wabasha St. On the site of the present church it is proposed to build stores and dormitories, the latter for young women. Cost, $40,000.

KANSAS CITY, MO.—The plans for the dormitory or boarding home of the Y. W. C. A. to be erected soon at the southwest corner of Eleventh St. and Troost Ave., have been accepted. They provide for a dormitory in which 115 women can board and a few transient roomers can be accommodated. The plans are for a building of stone and red brick 69 x 108 ft. in dimension. The lot is 150 ft. long, but 42 ft. will be taken up with a sunken garden, which is designed not only for the ornamental effect, but also to allow light to enter the basement, which will be used for a dining room and kitchen. There will be three floors besides the basement. The building committee consists of the following: Mr. J. K. Henderson, Pres. of the association; Miss Nettie D. Trimble, Gen. Secy.; Mrs. Hugh C. Ward, Mrs. J. P. Prescott, Mrs. Walter S. Dickey, Mrs. S. W. Moore, Mrs. Frank Hagerman, Mrs. L. B. Andrews, Mr. Louis W. Shouse, Mr. W. H. Collins and Mr. Walter Root. The architects are Owen & Payton, Scarritt Bldg.

ST. LOUIS, MO.—A 6-story apartment, to cost $100,000, will be erected on McPherson Ave., just east of Union Boulevard. The Sam Weil Realty Co., organized for the purpose, will construct the building. Plans and specifications already have been prepared and the contracts will be let within the next 30 days. The Mercantile Trust Co. made the deal for the purchase of the property by the Weil Co. The lot has a frontage of 100 ft. on McPherson Ave. and a depth of 185 ft. The building will cover practically all of the property. The proposed structure will be built of brick and concrete, will be six stories and will be divided into apartments of four, five and six rooms. It will also have electric elevators.

LITTLE ROCK, ARK.—We are officially advised that plans are being completed by Hertz & Tallant, 113 East 119th St., New York, for a theater and hotel building for I. Kempner, of Little Rock. The structure will be three or four stories high, 80 x 150 ft., and will cost $75,000. Contracts will be let in January, probably.

HOUSTON, TEX.—A public warehouse of reinforced concrete construction, ten stories in height and with two basements below, costing about $750,000, is to be built in Houston soon. The plans are being drawn in the office of Jerome Cochran Co. A large part of the plans are finished. The building will be of concrete and steel. It will be situated on the banks of the ship channel and will have facilities for receiving grain, etc., from barges and boats. The first floor will be arranged so that 30 railroad cars can be unloaded at once and 50 teams can be at work loading or unloading. On the first floor there will be five platform scales for weighing incoming and outgoing goods. The two basements will be constructed with cold storage facilities and the nine floors above will be arranged so that each can be used by one company if so desired. Seven elevators will provide for the hoisting of all goods, two of the elevators being capable of hoisting a car to the tenth floor. Besides the seven elevators there will be four electrically driven "barrel" elevators, or endless chain hoists, capable of hoisting barrels, and four spiral chutes, down which can be sent unbreakable material, such as sacks, etc.

An apartment building to cost $50,000 is to be erected on Main St. soon. It will be the initial project of the Century Co., which was organized recenly in Houston and chartered at Austin this week.

SANTA FE, N. MEX.—The Board of County Commissioners of Chaves County has adopted the plans of I. H. Rapp, of Santa Fe, Arch., for the proposed $130,000 Chaves County court-house.

SEATTLE, WASH.—The Board of School Directors has decided to build an addition to the Broadway High School, at a cost of $90,000. Edgar Blair, Arch., submitted sketches which were approved with instructions to complete them and include specifications. Bids will be advertised for soon.

BERKELEY, CAL.—Mrs. Phebe Hearst has announced that she will build an anthropological museum for the University of California to cost about $500,000. Plans for the structure, which will be built in accordance with the Greater University scheme of Benard, have not been prepared, but it is expected that actual work will be commenced during the coming year. The museum will be located on the campus facing the botanical gardens and directly opposite and to the north of the Doe Library building, now being erected. It will be one of the largest buildings in the group, and in order to conform to the general scheme will be of white granite.

SAN PEDRO, CAL.—Plans for remodeling the San Pedro city hall have been filed today by J. J. Backus, Building Inspector. The plans call for new doors and windows, cement floors in certain rooms, new plumbing and a new stairway.

LOS ANGELES, CAL.—A building to cost about $100,000 will be erected at Slauson and Cypress Aves. for St. Mary's Academy, now at Grand and 21st Sts. The building will contain class and living rooms, and will be used for an exclusive and select boarding and day schools for young women and girls. Plans for the structure are being prepared.

A 6-story apartment house to cost about $120,000 will be erected at the northeast corner of Grand and Pico Sts., for Mrs. E. G. Reighard. It will be a Class B building, 70 x 117 ft. On the first floor there will be four stores. Plans are being prepared by H. Albans Reeves, Arch., Chamber of Commerce Bldg.

Plans are in preparation for an 8-story office building to be erected on the southwest corner of Third and Hill Sts., for William Ferguson. It will cover the entire front of the lot, 65 ft., and will be of reinforced concrete. It will cost not less than $150,000. The lower floor will be occupied by stores. Work will begin soon.

Four 3-story and basement apartments, to cost a total of $100,000, will be erected by George B. Upp at the corner of First and Figueroa Sts. Train & Williams, Archs., 254 South Broadway.

MONTREAL, QUE.—The Richelieu & Ontario Navigation Co. has purchased a block of property fronting on Victoria Sq., and running east on Fortification Lane. On the site will be built, it is stated, an office building.

GUELPH, ONT.—The Ontario Government has chosen a site near Guelph for the proposed provincial reformatory. The new reformatory will be built by prisoners from the Central Prison. The plans for the building, which have yet to be finally approved, were prepared by J. M. Lyle, Arch., 14 Leader Lane, Toronto. The main enclosure will be 1,172 ft. x 666 ft., and the site will contain from twelve to fifteen acres. The reformatory will face south, and the cell wings, four in number and two stories high, will be at the southern end of the enclosure. The trade shops are at the north. Separate buildings for tubercular prisoners and for the criminal insane will be built. They will be situated to the east and west of the parade ground. C. R. W. Postlethwaite is Inspector of Asylum and Prison.

WATER-SUPPLY—IRRIGATION.

(denotes that this work is advertised in Engineering News.)*

NEW BEDFORD, MASS.—The Water Board on Dec. 14, let contract for furnishing a supply of c.-i. castings to the FULLER IRON WORKS, of Providence, R. I., at $3,085. Bids were received as follows: Fairhaven Iron Foundry Co., 4 cts. per lb. for Item 1 and 2¾ cts. for Item 2.

WATERBURY, CONN.—FRANK D'AURIO has been awarded contract by the Board of Public Works for rock excavation for Morris dam at $18,075, the lowest of five bids. Other bids were: Henry Spinach, $18,790; Goodman & Trumbull, $20,315; Lambo & Cimera, $21,800; Edward McManus, $24,000.

*NEW YORK, N. Y.—Bids are asked by the Board of Water Supply until 11 a. m., Jan. 18, for Contract 68, for the construction of seven steel pipe siphons, consisting of riveted steel shells 9 ft. 9 ins. and 11 ft. 3 ins. nominal inside diameter, enveloped with concrete and lined with Portland cement mortar, aggregating 2.6 miles; also several stretches of aqueduct in open cut and on embankment or cut-and-cover aqueduct, aggregating about 250 ft. The work is located in the Towns of Yorktown, Mt. Pleasant and Greenburg, and the city of Yonkers, Westchester County. J. Waldo Smith is Ch. Engr.

*NEW YORK, N. Y.—Bids are aked by the Boaru of Water Supply until 11 a. m., Jan. 18, for Contract 41, for furnishing and installing 20 5-ft. by 15-ft. sluice gates, 20 operating mechanisms, eight 66-in. stop-disk frames, four 66-in. stop disks and three sets of drive shafting, for various structures along the line of the Catskill Aqueduct, at Mount Vernon, Westchester County, and Brown's Station, Ulster County. J. Waldo Smith is Ch. Engr.

IRONDEQUOIT, N. Y.—Bids will be received until Jan. 4 by the Commissioners of Summerville Water District, in the town of Irondequoit, J. E. Summerhays, Secy., at their office, 328 Powers Bldg., Rochester, for constructing water-works, including 8-in. c.-i. pipe crossing of Genesee River and a distribution system complete with appurtenances, at Summerville and Windsor Beach. Separate bids will be received for the river crossing.

NEWBURGH, N. Y.—Contract for constructing the gate-house and the boiler-house at Washington Lake was awarded by the Water Board on Dec. 8 to J. G. ADINALFI, LOUIS MARINO & CO., of Newburgh, at $11,622. Other bidders were: The Alamo Construction Co., 215 West 125th St., New York, $12,572; Harper, Iova & Keogh, Newburgh, $13,640; George Sykes, 1123 Broadway, New York, boiler-house only, $4,375. William J. Blake, Jr., is City Engr.

ALBION, N. Y.—Walter E. Sexton, of Mineola, has completed plans, it is reported, for a new water supply system.

BUFFALO, N. Y.—Bids were opened on Dec. 16 by Francis G. Ward, Comr. Pub. Wks., for a 12-in. high pressure fire pipe line and conduit, from the present fire line at Pearl and Genesee Sts., through Pearl St. to Huron St., and through Huron St. to the end of the high pressure fire pipe line at Huron and Main Sts., with all necessary connections, valves, hydrants, conduits and drains. The bids received were: F. J. Mumm, Buffalo, $6,549; Dark & Co., 654 Main St., Buffalo, $7,500; George W. Moore, $8,200; Joseph F. Stabell & Co., 1125 Niagara St., Buffalo, $6,975; John W. Danforth Co., 70 Elliocott Sq., Buffalo, $8,477.

FORT HANCOCK, N. J.—We are informed that the G. & W. MFG. CO., 26 Cortlandt St., New York,, has been awarded contract by the U. S. Quartermaster Department, Fort Hancock, for work in connection with the new pumping system and extension of water mains, at about $6,000.

SCHUYLKILL HAVEN, PA.—A new water supply system will be installed here. Manufacturers who have suffered from the drought have decided upon the step. Estimated cost, $250,000.

PETERSBURG, VA.—The city will install a pumping plant of 1,800 gallons per minute capacity and will consider propositions on steam, producer-gas and electrically-driven pumps. Bids are asked until Jan. 10. R. D. Budd is City Engr.

WHEELING, W. VA.—Contract for the erection of the pump-house and wet well at the water-works, to accommodate the new 20,000,000-gallon pump, was awarded to J. A. SWINGLE & CO., of Zanesville, Ohio, at $89,315, by the Board of Control on Dec. 21. Other bids were: The Drave Contracting Co., Pittsburg, $122,955; N. C. Hamilton & Son, Wheeling, $95,000.

MARTINSBURG, W. VA.—The citizens voted on Dec. 14 to issue $14,000 of bonds for an extension to the water-works system.

MOREHEAD CITY, N. C.—The city has voted $20,000 of bonds for water-works and and a sewer system. Hazlehurst & Anderson, Wilmington, N. C., and Atlanta, Ga., are Consulting Engrs.

GREENVILLE, GA.—See item under Light and Power Plants.

GULFPORT, MISS.—Contract for installing two electrical pumps to increase the fire and domestic pressure, was awarded on Dec. 16 by the City Council to the A. M. LOCKETT CO., of New Orleans, La., at $4,477.

GEORGETOWN, MISS.—The City Council has granted a 25-year franchise to W. J. Davis, of Georgetown Mfg. Co., to furnish artesian water. Mr. Davis will contract for artesian well, and if flowing water is secured will begin the erection of a tank and laying of mains.

CENTERVILLE, MISS.—The city will spend $25,000 for the improvement of the water-works.

CROWLEY, LA.—The City Council has adopted an ordinance providing for the issuance of bonds for the construction of a water-works and electric light plant.

COLUMBUS, OHIO.—The Board of Managers of the Penitentiary has awarded contract for the installation of a water softening plant to the POWER PLANT & SPECIALTY CO., of Indianapolis, Ind., at $5,650.

CHESANING, MICH.—See item under Light and Power Plants.

JOLIET, ILL.—The Board of Local Improvements is considering the construction of a high-pressure water system.

BLOOMINGTON, ILL.—Bids were opened on Dec. 14 for sinking a well in connection with the water-works. Contract has been awarded to GRAY & BOWMAN, of Bloomington, at $10,100. George Cadagan Morgan is Consulting Engr., Chicago.

LEON, IOWA.—The citizens on Dec. 14 voted to issue $35,000 of bonds for the construction of water-works. S. G. Mitchell is City Clk.

CAWKER CITY, KAN.—Bids will be received by G. D. McKinley, City Clk., until Jan. 11 for furnishing material and installing water-works. Separate bids will be received as follows: Furnishing and laying 7,050 ft. of 6-in., 14,580 ft. of 4-in. c.-i. pipe, 2,250 ft. of 2-in. pipe, 28 hydrants, etc.; furnishing and erecting a 75,000-gallon tank and tower, 125 ft. to top water line, including foundations, etc.; a triplex pump and power head. George P. Taylor is Engr., Stockton, Kan.

MARION, KAN.—All bids opened on Dec. 16 for furnishing material and constructing water-works and an electric light plant from the plans of Burns & McDonnell, Scarritt Bldg., Kansas City, Mo., have been rejected. New bids will be asked. Thomas W. Bown is City Clk.

TOPEKA, KAN.—It is proposed to sink a well 60 ft. in diameter and lay about four miles of mains 4 to 10-in. Tesse Shaw is Supt. W.-Wks.

DODGE CITY, KAN.—A charter has been granted to the Arkansas Valley Irrigation Co., with headquarters here to develop irrigation in Ford, Gray and Edwards Counties. Capital, $400,000. The incorporators are: A. M. Eppenstein, Denver, Colo.; T. A. Scates, and Albert Watkins, Dodge City, and others.

SCANDIA, KAN.—The City Council is considering the installation of a water system as a means of fire protection.

HEBRON, NEB.—Bids are asked until 2 p. m., Jan. 12, by O. P. Hess, City Clk., for the construction of improvements, extension and enlargement of the city water-works system. C. H. Meeker, McCook, Neb., is Engr.

DODSON, MONT.—The Secretary of the Interior, Washington, D. C., has awarded contract, it is stated, to ARGENT & RANTSCHLER, of Dodson, for the construction of a portion of the Dodson south canal, Milk River irrigation project, Montana, involving the excavation of approximately 33,000 cu. yds. of material, at $3,040.

TEXARKANA, TEX.—The city has voted $200,000 of bonds for the construction of a water-works system.

FORT WORTH, TEX.—The National Machinery Co., Oklahoma City, Okla., is the lowest bidder at $66,307 for 20 miles of pipe for dual water system and various extensions. Work includes 61,215 ft. of 6-in. pipe, 22,950 ft. of 8-in. pipe, 12,700 ft. of 10-in., 3,000 ft. of 12-in., 800 ft. of 16-in. and 4,500 ft. of 12-in.

OKLAHOMA CITY, OKLA.—See item under Sewerage.

PASCO, WASH.—Contract for piping the 10,000 acres to be irrigated by the Pasco Reclamation Co. has been awarded, it is stated, to the WASHINGTON PIPE & FOUNDRY CO., of Tacoma, Wash., at about $125,000. The work will require six miles of 36-in. and 30-in. pipe and smaller pipe down to 4-in.

COLUSA, CAL.—Bids will be received until Jan. 3 by the city for the construction of water-works. Estimated cost, about $50,000. J. W. Kaerth, is City Engr.

STRATFORD, ONT.—Bids are asked by the Secretary of the Water Commissioners until Jan. 15 for two electrically driven-turbine pumps of 1,000,000 and 1,500,000 gallons capacity. T. Davis Barnett is Chn.

VANCOUVER, B. C.—Bids are asked until Jan. 12, it is reported, for the annual water supply material, including ten miles of 12, 8 and 6-in. steel and iron pipe, and also 250 tons of 4-in. c.-i. pipe. W. A. Clement is City Engr.

SEWERAGE.

(denotes that this work is advertised in Engineering News.)*

PITTSFIELD, MASS.—A. B. Fa[illegible]m, City Engr., will prepare plans and es[illegible]ates for the construction of a trunk sew[illegible] for the east side of the city, and impro[illegible]ents at the pumping station.

SYRACUSE, N. Y.—Plans for c[illegible]ructing 300 ft. of 30-in. sewer under the [illegible]cks of the New York Central and L[illegible]wanna railroads and the Erie canal, wo[illegible]k in a tunnel, were approved on Dec. [illegible]y the Intercepting Sewer Commission. [illegible] is a part of the projected improvemen[illegible] Harbor Brook, and it will be necessa[illegible] for the commission to first obtain the c[illegible]nts of the railroad corporations and cana[illegible]thorities. Iron pipe will be laid in th[illegible] tunnel, and the work may be complete[illegible] before spring. The lower end of the se[illegible]n covered by the plans approved is at [illegible]e head of Liberty St., and the sewer is [illegible] follow the course of the creek and pass [illegible]er the railroad tracks and canal near the [illegible]nderson plant of the Crucible Steel Co.

SYRACUSE, N. Y.—Contract for [illegible]ding a 24 to 36-in. sewer in Onondaga A[illegible] north and south of Onondaga Park, [illegible] also through the park, has been awa[illegible]ded to CHARLES T. HOOKWAY, at $12,28[illegible]

PERTH AMBOY, N. J.—Bids are [illegible]ed until 8.30 p. m., Jan. 3, by the Counci[illegible] for the construction of a 15-in. pipe sewer in Hall Ave., from Pacific to Amboy Aves. George M. Adair is Street Comr.

EAST ORANGE, N. J.—The City Council is considering the construction of sewers in Main St. Estimated cost, about $20,[illegible]00.

HAZELTON, PA.—The city is considering the repair of the Diamond Ave. sewer. Estimated cost, $10,000.

CHAMBERSBURG, PA.—Bids are asked until 7.30 p. m., Jan. 3, by the Borough for the construction of a concrete storm sewer in East Queen St. William A. Laird is Boro. Engr.

RICHMOND, VA.—The Board of Aldermen on Dec. 14 decided to construct the first section of the Dooley Ravine sewer. Estimated cost, $80,000.

MOREHEAD, N. C.—See item under Water Supply—Irrigation.

GREENVILLE, GA.—See item under Light and Power Plants.

EASTMAN, GA.—Arthur Pew, of Atlanta, Ga., has been selected to prepare plans and estimates and supervise the construction of a complete system of sanitary sewers and purification plant.

LOUISVILLE, KY.—Bids were opened on Dec. 17 by the Commissioners of Sewerage for Contract 58, the construction of the 21st St. sewer. The lowest bid was that of Guild & Co., of Chattanooga, Tenn., as follows: 2,180 lin. ft. earth excavation, $4.76; 826 lin. ft. earth excavation, $3.38; 740 lin. ft. earth excavation, $2.50; 29 lin. ft. earth excavation for 18th St. connection, $3; 970 cu. yds. reinforced concrete, $9.50; 520 cu. yds. plain concrete, $10; 20 sq. yds. vitrified brick paving, $3; 60,000 lbs. plain steel bars, 3.5 cts.; 58,000 lbs. deformed steel bars, 3.5 cts.; 58,000 lbs. deformed steel bars, 3.5 cts.; 20 cu. yds. excavation below masonry, $2; 20 cu. yds. gravel refill, $2; vitrified pipe and fittings, $534.40; 30 lin. ft. pipe laying, $1; cleaning up, $100; Total, $32,355. Other bids were: Blackstaff Engineering Co., Philadelphia, Pa., $36,411; C. F. Fitch & Co., Louisville, $38,304; C. T. McCracken & Co., Columbus, Ohio, $41,997; D. F. O'Connell, Dorchester, Mass., $50,403; Henry Bickel Co., Louisville, $52,015. J. B. F. Breed is Ch. Engr.

SAGINAW, MICH.—Bids will be received by the Board of Public Works until 4.30 p. m., Dec. 31, for constructing a sewer in Ellsworth St. The quantities are: 930 lin. ft. reinforced concrete sewer, 390 lin. ft. open ditch; 540 lin. ft. 30-ft. piling in work; 30,000 ft. B. M. timber in work, together with the necessary manholes and catch-basins. David C. Bell is Clk.

DETROIT, MICH.—Bids were received on Dec. 18 by J. J. Hearer, Comr. Pub. Wks., for the construction of the Fairview sewer. The lowest bidders were: First section, Parkview Ave., from Edgemere Ave. to Jefferson Ave., 1,761 lin. ft., including five manholes, James Hanley, Peninsula Bank Bldg., Detroit, at $24,644; Second section, 3,700 lin. ft., eight manholes, Langley & Jaynes, 681 Toledo Ave., Detroit, at $46,665. Engineer's estimates, $31,000 and $64,000 respectively.

LEWISTOWN, ILL.—Contract will be let about Feb. 1 for the construction of sanitary sewers, from the plans of C. W. Brown, of Jacksonville, Ill. Estimated cost, $28,943.

LA CROSSE, WIS.—The extension of the trunk sewer on Mississippi St. from Ninth to 16th Sts., with a large lateral or branch sewer on 16th St. from Green Bay to Mississippi St., and smaller sewers in Johnson, Adams and others streets, is contemplated. Estimated cost, $90,605.

MILWAUKEE, WIS.—Contract has been awarded by the Board of Public Works to G. E. ZIMMERMANN, 3012 McKinley St., Milwaukee, for constructing a sewer in 34th St. from Auer to Concordia Aves. at $1.1[illegible] per lin. ft.

GRINNEL, IOWA.—GUY E. SMITH, Indianola, has been awarded contract by the city for the construction of 5,580 ft. of storm sewer, diameter from 10 to 24 ins. The work includes furnishing sewer pipe, manholes and laying the same complete. Bids were opened on Dec. 14.

ALLIANCE, NEB.—Bids are asked by F. W. Irish, City Clk., until Dec. 31 for constructing 4,306 ft. of 8-in. sewer. Estimated cost, $4,215.

HEBRON, NEB.—Bids are asked until 2 p. m., Jan. 12, by O. P. Hess, City Clk., for labor and material for constructing lateral sewers for sanitary district No. 1. The work

include 13,000 ft. of 8-in. vitrified clay pipe, twelve flush tanks, 25 manholes, etc. C. H. Meeker, McCook, Neb., is Engr.

COLUMBIA, MO.—Bids will probably be asked about Jan. 15 for the construction of pipe sewers. Estimated cost, about $50,000. John R. Bicknell, City Clk.; D. B. Duncan is City Engr.

DALLAS, TEX.—The City Commissioners have awarded contract to F. H. LANCASHIRE of Dallas, at $22,037 for constructing storm sewer in Clear Springs Ave., monolithic concrete work and vitrified piping to be used. J. B. Winslett is City Secy.

BEEVILLE, TEX.—The City Council has selected Terrell Bartlett, of San Antonio, to make survey, etc., with a view to the construction of a sewer system.

HOUSTON, TEX.—Bids were received as follows on Dec. 20 by the City Council for the construction of the Fifth Ward sanitary sewer: KELSO & VAUTRIN, Galveston, $72,[illegible] (awarded contract); T. J. Shea, New Orleans, La., $77,000; Trueheart & Jackson, San Antonio, $77,152; J. W. Maxcy Co., Houston, $77,324; J. W. Gurley, Mobile, Ala., $77,330; W. W. Cook & Son, Junction City, Kan., $80,653; J. C. Underwood, Houston, $87,848; Texas Grading Co., Houston, $98,569.

LAWTON, OKLA.—Bids, in duplicate, will be received by the Department of the Interior, Washington, D. C., until 2 p. m., Feb. 16, for the construction of a sanitary sewer system for the North Addition to the city of Lawton, in accordance with drawings and specifications, copies of which, with form of proposal, may be had on application at the Department. The plans and specifications may also be examined in the office of the Mayor of Lawton and of John D. Kennard, Civil Engr., Lawton. Frank Pierce is First Assistant Secy.

OKLAHOMA CITY, OKLA.—The city voted $150,000 of bonds for sewer and water extension. W. C. Burke is City Engr.

SAPULPA, OKLA.—Bids will be received by Ira J. Anderson, City Clk., until Jan. 10 for furnishing material and constructing a brick trunk sewer. The work will include 12,920 ft. of 42 to 84-in. brick sewer, eleven manholes, nine inlets, 300 ft. of 24-in. vitrified pipe and 52 cu. yds. concrete. E. D. Kirkpatrick is City Engr.

WALTER, OKLA.—The city has voted $26,000 of sewer bonds.

STEAM SPRINGS, COLO.—The CONSOLIDATED ENGINEERING CO., Denver, Colo., has been awarded contract for the construction of a sewer system here to cover one-half of the business portion of the town.

SPOKANE, WASH.—The following are the bids opened by the Board of Public Works on Dec. 10 for the construction of the trunk sewer in the First Ward, District 15: John Fife, $29,000; J. C. Broad, $34,965.

HOQUIAM, WASH.—The City Council has adopted resolution providing for the construction of the "K" St. sewer to drain into Grays Harbor to cost $50,000, a sewer system in Fourth, Fifth, "I" and "M" Sts., to cost $9,800, a sewer in Fifth, Sixth, Seventh and "M" Sts. to cost $13,800, and a sewer system to drain the city proper east of "K" St. to cost about $200,000.

KLAMATH FALLS, ORE.—Bonds for $40,000 have been sold for the construction of sewers here.

SAN FRANCISCO, CAL.—DONOVAN & GALLAGHER have been awarded contract for the construction of a 15-in. vitrified salt-glazed, ironstone pipe sewer with 18 Y branches and one brick manhole with cast-iron frame and cover and galvanized wrought-iron steps, in Moscow St., from Brazil Ave. to Excelsior Ave.

Bids are asked by the Board of Public Works until Jan. 5 for constructing sewers in Sections A, B, C, D and E, of Gerba Buena District.

PHOENIX, ARIZ.—Olmsted & Gillilen, Wright & Calender Bldg., Los Angeles, Cal., have completed and presented to the City Council two plans for a sewer system for the city. Under Plan No. 1, the city is to purchase present system which is now in general use in the business section of the city, and the two systems will be combined and the pipes of one connected up with the other. Estimated cost, about $250,000. No. 2, the present system will be paralleled, the new pipes being laid considerably deeper than the present mains. Estimated cost, about $300,000.

TUCSON, ARIZ.—The City Council has decided to lay about 8,285 ft. of pipe sewers in Cushing, Simpson and South Meyer Sts. Estimated cost, about $4,500.

BLACKFOOT, IDAHO.—We are officially advised that bids were received as follows on Dec. 21 by the Sewer Commission for the construction of a sewer system here: LINDQUIST & OREN, Billings, Mont., $37,558 (awarded contract); R. M. Barsden & Co., Butte, Mont., $38,325; H. & P. McMullen Co., Idaho Falls, Idaho, $39,859; James Kennedy Construction Co., Salt Lake City, Utah, $40,-000; Carlson-Lusk Hardware Co., Boise, Idaho, $41,304; Skoglund & Orstrum, Butte, $42,014. A. C. Kelsey is Engr.

KINGSTON, ONT.—Bids will be received until Dec. 31 by H. B. R. Craig, City Engr., for supplying for the year 1910 sewer pipe and about 5,000 bbls. of Portland cement.

STREETS AND ROADS.

(denotes that this work is advertised in Engineering News.)*

CONCORD, N. H.—We are officially advised that bids were received by A. W. Dean, State Engr., Concord, on Dec. 8, for (a) grading and surfacing with gravel about 3½ miles of the West Side road in the town of Lebanon, and (b) for grading and surfacing with gravel about one and one-half miles of the West Side road in the town of Hanover. Contracts have been awarded as follows: (a) to P. A. McINTYRE, of Suncook, N. H.; (b) to the LANE CONSTRUCTION CORPORATION, of Meriden, Conn.

WAKEFIELD, MASS.—The Finance Committee of Wakefield has under consideration a $20,000 plan for the improvement and repair of the town's highways and sidewalks, drawn by the Selectmen. The specifications of the Selectmen call for macadamizing, repairs, new sidewalks and edgestones and maintenance, totaling $20,000. The expenditure of the sum has been apportioned as follows: Main St., $3,500; Railroad St. and North Ave., $2,000; Water St. to Saugus line, $1,000; Willow Road to Reading line, $1,000; Crescent, Centre and Mechanic Sts. district, $1,000; West Chestnut St., $700; Richardson Ave., $800; Albion St. to Stoneham line, $500; Nahant St., $300; Prospect St., $400; streets in Greenwood district, $500; new sidewalks and sidewalk repairs, $2,000; street cleaning and patrol in centre of town, $3,000; concreting and edgestones, $1,200; miscellaneous repairs, $1,500.

WOONSOCKET, R. I.—Both branches of the Woonsocket City Council have passed a resolution to construct a highway from River St. to the Blackstone River, and to bridge the latter. It is stated that the passing of this resolution assures the building of the worsted yarn spinning mill by Charles L. Harding of Boston, Mass., at Woonsocket. Work on the plant, which is to be equipped with 10,000 spindles, probably will be begun about March 1.

HARTFORD, CONN.—Plans for state road work have been received by James H. MacDonald, State Highway Comr., as follows: From W. A. Williston, Engr., 15,700 lin. ft. on the Torrington-Thomas road in the town of Harwinton; 7,500 lin. ft. on the Winsted-Norfolk road in the town of Winchester. From A. B. Alderson, Engr., 10,200 lin. ft. in the town of Barkhamsted and 2,800 lin. ft. in the town of New Hartford on the New Hartford-Winsted turnpike. From W. H. Knight, Engr., 22,30 lin. ft. on the New Milford-Sherman road in the town of New Milford. From A. B. Hulbert, Engr., 8,300 lin. ft. on the Norfolk road in the town of Winchester and 13,150 on the Torrington road in the town of Winchester.

SYRACUSE, N. Y.—The Board of Contract and Supply has awarded to FRED J. BAKER, University Block, at $8,386, the contract for paving Stolp Ave. with sheet asphalt between Summit Ave. and Dudley St.

NEW ROCHELLE, N. Y.—Bids will be received until Jan. 6 by the Board of Public Works for laying curbs, gutters and sidewalks on Mayflower Ave. Richard Lathers, Jr., is Chn.

NEW YORK, N. Y.—Bids are asked by George Cromwell, Pres. Boro. of Richmond, until noon, Jan. 11, for furnishing all the labor and materials required for regulating and repaving with the bitulithic pavement laid under the patents of Warren Bros., or asphalt blocks, on present macadam foundation, the roadway of Fingerboard Road from a point 100 ft. west of Egbert Pl. to a point 239 ft. south of Cleveland Pl., Boro. of Richmond, together with all work incidental thereto.

MILLVALE, PA.—Bids are asked until 3 p. m., Jan. 4, by H. H. Dixon, Boro. Clerk, 401 Grant Ave., Millvale, Pa., for grading, curbing and paving Sample St. in the Borough of Millvale.

BRADFORD, PA.—The SOUTH SHORE CONSTRUCTION CO. of Erie, Pa., has been awarded the contract to build about 7,000 ft. of macadam road in McKean County. The work will be started in the spring. The contract price is $14,834.

PORTSMOUTH, VA.—This city contemplates expending $200,000 for street paving for the year 1910. Bascom Sykes is City Engr.

NEWBERN, N. C.—Bids will be received until Jan. 4 by F. T. Patterson, City Clerk, for paving about 48,000 sq. yds. of street with brick with cement filler; brick with sand filler, bitulithic or asphalt macadam.

ENSLEY, ALA.—The City Council has awarded COPELAND & INGLISH the contract for paving with brick portions of Ave. E and 19th St., at about $30,000.

NEW ORLEANS, LA.—W. J. Hardee, City Engr., has recommended for the acceptance the bid of Metropolitan Construction Co. for the paving of a portion of City Park Ave., at $207,724.

DUNLAP (Mount Healthy post-office), OHIO.—Bids are asked by the Board of County Commissioners, at Cincinnati, until Jan. 7 for improving the Stone Mill Road, from Colerain Pike at Dunlap to the county line. Specification No. 986. Fred Dreihs is Clerk.

AKRON, OHIO.—C. M. Gaylord, County Comr., announces, according to the Akron "Times," that five petitions for road improvements aggregating 23¼ miles of road in Summit County, have been allowed and the Surveyor has prepared estimates of the greater part of the improvements, which total nearly $250,000, and are as follows: Kenmore Road, 2 4-5 miles, $44,161; East Market St. road, 1¼ miles, $19,393; Arlington Road, 1 1-8 miles, $17,343; Hudson Road to Cleveland, 1⅞ miles, $238,000; Merriman Road, one mile (estimated), $14,000; South Main St. road, 1¼ miles (estimated), $17,-000. One petition, that for the improvement of the South Main St. road from the end of the Main St. pavement to Swart's Corners, a distance of 1¼ miles has not been allowed, but probably will be at once. Joseph Gehres is County Engr.

FREMONT, OHIO.—At a meeting of the Sandusky County Commissioners and the Trustees of Rice, Ballville and Sandusky townships, held recently, at Fremont, it was decided to improve Sandusky County's portion of the Harrison state road, which will extend from Columbus to Port Clinton, on Lake Erie. There will be 15 miles of the road in this county and to pike this will cost about $80,000. The state will pay one-half this cost, the county 25%, and the townships 25%.

SOUTH BEND, IND.—Bids are asked until 10 a. m., Dec. 31, for a pavement on Prairie Ave., 20,922 sq. yds. The work will consist of 16,957 cu. yds. of excavation and 8,260 ft. of curb. Bids will be received on brick, asphalt, bitulithic and wooden block.

ELKHART, IND.—The Board of Public Works has awarded a contract to pave Marion St., with asphalt to the ANDREWS ASPHALT PAVING CO., of Hamilton, Ohio, on its bid of $1.96 a sq. yd. and a total of $24,126, less the reduction caused by a change in plans from a 40-ft. to a 38-ft. roadway, or about $23,500. The above total does not include the railway's portion.

SAGINAW, MICH.—About $142,000 is to be expended on road improvements in Saginaw County during the coming year, according to press reports.

JACKSONVILLE, ILL.—The contract probably will be let April 1 for about 14,000 sq. yds. of asphalt paving on Prairie St. with 9,900 ft. combined curb and gutter. Cost, $36,975. C. W. Brown, of Jacksonville, is Engr.

EAST MOLINE, ILL.—The city contemplates paving the bluff road from Twelfth St. to Warner's Crossing in East Moline, with brick, at a cost of about $27,500.

EAST ST. LOUIS, ILL.—Bids are asked until noon, Jan. 8 by the Board of Local Improvements for the construction of the local improvement of 25th St., from the northerly line of State St. to the southerly right of way line of the Louisville & Nashville R. R. by grading, draining, curbing and paving. W. J. Crocken is City Engr. There are to be lettings of contracts for further improvements of streets the latter part of January.

PIPER CITY, ILL.—The contract for paving the streets of Piper City, Ford County, has been let to C. FINLEY, of Hoopeston, Ill., at $14,780.

DAVENPORT, IOWA.—Bids are asked until 2 p. m., Jan. 4, by Thomas Murray, Chn. Bd. of Public Works and City Engr., for the following improvements as per plans and specifications on file in the office of the Board of Public Works for curbing and excavating and paving the following streets and alleys: Fulton Ave. from the west line of Eastern Ave. to the west line of Jersey Ridge Road, including intersections, being about 1,804 lin. ft. to be curbed with Portland cement concrete curb 3,644 lin. ft. and excavated and paved with one course of vitrified brick on a 5-in. Portland cement concrete foundation, with sand top filler, being about 4,186 cu. yds. of excavation, and about 7,966 sq. yds. of brick paving, including the laying of the proper foundation therefor. South St. from the east line of Division St. to the west line of Davie St., including intersections; being about 744 lin. ft.; to be curbed with Portland cement concrete curb 1,488 lin. ft. and excavated and paved with one course of vitrified brick on a 5-in. Portland cement concrete foundation, with sand top filler, being about 870 cu. yds. of excavation and about 2,683 sq. yds. of brick paving, including the laying of the proper foundation therefor. Ripley St. from the north line of Eighth St. to the north line of Ninth St., including intersections, being about 380 lin. ft., to be curbed with Portland cement concrete curb, 440 lin. ft. and excavated and paved with one course of vitrified brick on a 5-in. Portland cement concrete foundation, with sand top filler; being about 443 cu. yds. of excavation, and about 1,402 sq. yds. of brick paving, including the laying of the proper foundation therefor. To be commenced on or before April 1 and completed on or before June 1.

OTTUMWA, IOWA.—Bids are asked until Jan. 3 for approximately 16,000 sq. yds. of brick paving with 6-in. Portland cement concrete foundation and 1,200 sq. yds. of creosoted block paving and 10,000 lin. ft. of cement curb. J. T. Brady is City Engr.

ARKANSAS CITY, KAN.—This city contemplates constructing pavement the coming year. Also several miles of sidewalk, curb and gutter. J. H. Matthews is City Engr. J. H. Titus, Consult. Engr., Arkansas City.

JEFFERSON BARRACKS, MO.—Bids are asked until 11 a. m., Jan. 5, by Capt. Stanley H. Ford, Q. M., for construction of roads, walks, etc.

MUSKOGEE, OKLA. — The PHOENIX CONSTRUCTION CO. has secured the contract for paving East Side Boulevard with asphalt at $50,798.

ADA, OKLA.—Bids will be received until Jan. 3 for paving 38,680 sq. yds. with Oklahoma rock asphalt on a 5-in. Portland cement concrete base. P. G. Ekman is City Engr.

GUTHRIE, OKLA.—Bids are asked until 5 p. m., Jan. 6, by A. A. Leer, City Clerk, for improving District No. 33, Thirteenth St., from the south line of Noble Ave. to the south line of Cleveland Ave., width 30 ft. This improvement to be composed of sheet asphalt on a 5-in. concrete base, with combined concrete curb, and 3-ft. gutter.

OKLAHOMA CITY, OKLA.—We are officially advised that bids were received by Bob Parman, City Clerk, on Dec. 20, for the paving, necessary grading and such other work as may be necessary, including oak curbing, of all the alleys in Block 62, Original Plat, and in the east 200 ft. of Block 3, Main St. Addition, to be paved the total width of each alley. The materials to be used in paving the roadway of said alleys shall be vitrified brick, with a 5-in. Portland cement concrete foundation. W. C. Burke is City Engr. The contract has been let to R. R. FULLER.

GOLDEN, COLO.—Bids are asked until Jan. 3 (change of date), for constructing a permanent driveway or boulevard from Denver to Golden. C. W. Comstock is State Engr., Denver. No bids were received for this work on Dec. 18.

SPOKANE, WASH.—The following bids were received by the Board of Public Works on Dec. 10 for grading and curbing a portion of (a) Monroe St., (b) Bernard St.: J. B. Mitchell, (a) $14,986; John Fife, (a) $15,-800, (b) $18,500; Mitchell Bros., 1222 Third Ave., (a) $16,200, (b) $18,904; Abbott & Joslin, (a) $15,443; J. C. Kennedy, (b) $16,-800.

HOOD RIVER, ORE.—The City Council on Dec. 7 awarded a contract to G. W. ALDRED for macadamizing about half a mile of thoroughfares here, at $10,000.

MANUFACTURING PLANTS.

(denotes that this work is advertised in Engineering News.)*

NORTHAMPTON, MASS.—We are officially advised that the McCullum Hosiery Co., Northampton, Mass., is organizing an additional company to engage in the manufacture of silk hosiery, which probably will be called the Northampton Silk Co. The McCullum Co. will be conducted as a partnership concern, the preferred stock being called in for Jan. 1. The Northampton Silk Co. will issue $100,000 of 6% bonds, guaranteed by the McCullum Company, and $150,000 of common stock will be issued. The company expects to secure a site at once and will erect a plant to employ 250 to 300 hands. A slow-burning factory, 160 × 80 ft., will be built, probably of brick. Fox & Gale, 4 Park St., Boston, Mass., are Archs.

GREYSTONE, R. I.—The contract has been awarded by Joseph Benn & Sons, of Greystone, to build a weave shed and spinning mill, raise the roof of a dyehouse, to construct a basement and first floor of reinforced concrete and build a concrete roofed new dyehouse with brick walls and steel beams, and build eight cottages at a cost of about $400,000. The concern is one which came from Huddersfield, England, some time ago, to manufacture mohair at Greystone. At that time the J. W. BISHOP CO., 107 Foster St., Worcester, Mass., built $350,000 worth of mill property. The new work practically doubles the capacity of the concern. The weave shed and spinning mill will be a 5-story building, 190 × 62 ft., for the main building, and 70 × 50 ft. for the secondary building. The floor space will be about 76,000 sq. ft. The roof of the present dye house will be raised and reinforced concrete floor built and brick and steel beams put in. The basement and first floor of the new dye house will be of reinforced concrete, and the roof reinforced concrete, sawtooth type. The dyehouse will have 60,000 sq. ft. on the ground.

WOONSOCKET, R. I.—See items under Streets and Roads.

SHELTON, CONN.—It is expected that the plant of Radcliffe Bros., manufacturers of hosiery and underwear, Shelton, will be rebuilt. It was partly destroyed by a boiler explosion lately, involving a loss estimated at about $100,000.

BUFFALO, N. Y.—The Strong Steel Foundry Co. will build an addition to its foundry, 50 × 160 ft., at East Amherst St. and the Erie R. R. O. H. P. Champlin is Gen. Mgr.

Green & Wicks, Archs., 110 Franklin St., are receiving bids for a 4-story and basement bakery, 45 × 80 ft., reinforced-concrete construction, to be built on Court St., near The Terrace, by Faxon, Williams & Faxon. Estimated cost, $40,000.

B. I. CROOKER, 4 Builders' Exchange, has been awarded the contract for the masonry for the machine shop, 100 × 310 ft. and one and two stories high, to be built by the Buffalo Foundry & Machine Co. at East Ferry St. and the New York Central R. R. Belt Line. Contract for steel has not been awarded. Henry D. Miles is Pres., East Ferry St. and Winchester Ave.

The King Sewing Machine Co. has leased for a long term eight acres of land on Rano St. and the Delaware, Lackawanna & Western R. R., on which a manufacturing plant will be erected, costing about $150,000. Three 1-story fireproof buildings will be erected at once with a floor space of 200,000 sq. ft. A fourth building will be built later. There will be a main building, 300 × 300 ft., with sawtooth roof; foundry, 150 × 300 ft.; warehouse and office building.

BUFFALO, N. Y.—The Aluminum Casting Co., of Cleveland, Buffalo and Detroit, has purchased a site of seven acres at Elmwood and Hertel Aves. and the Erie R. R. and will build an extensive plant. A foundry building, 120 × 275 ft., 1-story, of structural iron and brick, will be erected at once and additional structures next spring. William H. Cooley is Local Mgr., 1065 Niagara St.

BUFFALO, N. Y.—The Rogers-Brown Iron Co., recently incorporated with a capital of $5,000,000, has acquired by purchase and merger the property of the Buffalo & Susquehanna Iron Co., including ore mines in Minnesota and the property of the South Buffalo Canal & Dock Co., having a frontage of about 1,000 ft. on the Union Ship Canal at South Buffalo. It will build at once upon same ore docks and two blast furnaces for the manufacture of pig iron. The first furnaces will be duplicates of the furnaces of the Buffalo & Susquehanna Iron Co. adjoining, and contracts for their construction and erection and contracts for the new ore docks will be let within a few weeks. William A. Rogers is Pres. and Hugh Kennedy, Vice-Pres. and Gen. Mgr. of the new company. Offices, Erie County Bank Bldg., Buffalo.

ROCHESTER, N. Y.—Crandall & Strobel, 400 Ellwanger & Barry Bldg., are preparing preliminary plans for a 5-story factory building, of brick and steel construction, to be erected by Curtice Bros. on Curtice St.

SYRACUSE, N. Y.—The H. H. Franklin Mfg. Co. is preparing plans for a 6-story and basement addition, 65 × 300 ft., to its plant on West Marcellus St. Its construction will be of steel frame brick and structural iron.

ROME, N. Y.—The Rome Soap Mfg. Co., George H. Brown, Secy., will build a 2 and 3-story factory, 140 × 160 ft. and 30 × 105 ft. The Houchin-Aikes Co. are Archs. and Engrs., 45 53d St., Brooklyn, N. Y.

ERIE, PA.—The Erie Engine Works will build a 2-story foundry and machine shop, probably of reinforced-concrete construction. William Hardwick is Pres.

BETHLEHEM, PA.—South Bethlehem & Saucon St. Ry. Co., Bethlehem, Pa., will build a new concrete and steel car house at Bethlehem. BENEDICT BIRKEL, South Bethlehem, has the contract.

JOHNSTOWN, PA.—The Cambria Steel Co. has adopted plans for a rod and wire plant. The contract for the rod and wire mills of the Cambria Co. has been awarded to the MORGAN ENGINEERING CO., of Alliance, Ohio, and work on the mills, which will cost about $1,500,000, will be started at once. They will be erected near the present works at Johnstown.

LEBANON, PA.—Announcement has been made that the Lebanon Valley Iron Co., which has a mill plant at Hebron, east of this city, had increased its capital from $300,000 to $1,000,000, and would double the output of its plant. A fourth mill will be added and two large factory buildings erected for the manufacture of bolts, nuts, rivets and spikes. Erection of the addition to the plant is to be started early in the new year, and it is planned to have the entire plant in operation by the close of 1910. The new plant will employ 1,500 men.

NORTHWILKSBORO, N. C.—The incorporators of the Finwin Cotton Mills expect to effect organization soon, and will determine then details of buildings, machinery, etc. They recently chartered the company with a capital stock of $200,000 and the plant will be located at Northwilkesboro, N. C. Among the incorporators are T. B. Finley, of Northwilkesboro, and J. Locke Erwin, Secy. of the Locke Cotton Mills Co.

ATHENS, GA.—Additional facilities for the Star Thread Mills are to be provided, including doubling the capacity. This plant is now operating 7,000 ring spindles, driven by water power, on the production of cotton yarns. James White, W. Y. Bryan and J. Y. Carithers are planning in this connection the construction of a water-power electrical plant at Barnett Shoals, on the Oconee River. The plan contemplates the construction of a dam 50 ft. high, for developing 4,000 HP., to be transmitted by electricity for operating the Star plant and for lighting purposes. It is believed that a $250,000 company will be organized for the purpose of promoting this enterprise. Mr. White is proprietor of the Star Mills.

ERWIN, TENN.—O. P. Heath, of Charlotte, N. C., will build a hydro-electric plant and a cotton factory at Erwin, Tenn. They expect to develop 3,000 HP. for transmission by electricity to the mill for power and light and to other industries in and near Erwin, besides lighting that town. The power site to be developed is known as the Devil's Looking Glass, and it is on the Nolachuckey River. The firm has purchased this power property and various nearby lands, the latter costing $18,000. Heath & Co. are interested in other cotton mills.

COLUMBUS, OHIO.—The Farmers' Fertilizer Co., of Columbus, will erect a building at its plant at Grogan, near Columbus.

CLEVELAND, OHIO.—The American Steel & Wire Co. will erect a $1,250,000 blast furnace here immediately adding it to the equipment of the central group of furnaces. W. E. Corey is Pres. of the U. S. Steel Corporation, 71 Broadway, New York. The enlarged capacity of the central group will be 510,000 tons a year.

Plans have been completed for a mill for the William I. Keetch Co., manufacturers of men's and women's sweaters, fancy knit goods. The building will be four stories high with basement and will have a total floor space of 35,000 sq. ft. The mill will be completed early next spring.

H. A. Robinson, of Akron, Ohio, will erect a sewer pipe plant on property which he has purchased from the National Chemical Co., on Mill Creek, between Warner Road and Marcelline Ave. The property consists of 54 acres. The investment will represent an outlay of $700,000, including the site. The proposed plant has been designed by W. S. Ferguson, of the F-P Construction Co., Euclid Point Bldg., who will let construction contracts.

EVANSVILLE, IND.—The Alfred E. Baxter Engineering & Appraisal Co., 943 Ellicott Sq. Bldg., Buffalo, have prepared plans for a 6-story grain elevator and flour mill, 60 × 152 ft., and a 2-story warehouse and office building, 52 × 144 ft., to be erected at First St. and the Belt Railroad by Iglehart Bros. The buildings will be of brick, steel and hollow tile with cement floors. Owners will receive bids until Jan. 4.

ELKHART, IND.—The Swift Packing Co., of Chicago, is preparing to construct a plant in this city for the repair of refrigerator cars.

VINCENNES, IND.—The Farmers' Educational Cooperative Union, W. W. Myers, Pres., will soon ask for bids for the erection of an elevator, storehouse and crib at Wheatland, Ind.

INDIANAPOLIS, IND.—The Indiana Steel Co., which proposes to build an additional $45,000 plant at Gary, has increased its capital stock to $20,000,000.

GARY, IND.—See item under Chicago, Ill.

ATTICA, IND.—The National Car Coupler Co. has let a contract to the ATTICA BRIDGE CO. to erect steel for the new addition to the coupler plant. The building will be 100 × 157½ ft., and will cost $13,000.

DETROIT, MICH.—Articles of association of the Detroit Bridge & Steel Works have been filed in Lansing. The capital stock is $200,000. The company has purchased 12 acres of land at Dearborn Road and the railroad, and work will be started at once on six buildings, which are expected to be ready for use by March. The plant will employ 150 men at the start.

PEORIA, ILL.—The Peoria Railway Terminal Co. is considering the erection of a car house and shops at South Bartonville to replace the buildings which were destroyed by fire in October. The new structure is estimated to cost about $20,000. E. A. Burrill is Gen. Mgr. and Purchasing Agent, Peoria.

We are officially advised that plans and specifications are being prepared under the direction of the officers of the Avery Co. for the erection of an addition to their main factory at an approximate cost, when completed and equipped of $200,000. The main building will be 700 × 93 ft., extending on Adams St. in the village of Averyville from Woodlawn Ave. to within 50 ft. of the Mackemer Lumber Co.'s office. Connected with the main building will be a wing 160 ft. in length extending to the Rock Island tracks. The shops will be built of steel, brick or concrete, and will be of fireproof construction. The structure will have a central bay 700 × 40 ft. and two side bays 24 ft. wide with a gallery over each side bay. The central bay will be 39 ft. high. The crane rails to be 32 ft. above the floor. A wing, 150 × 80 ft., will be connected to the main building. This addition will be a stock room, with a railway switch to run through the lower end. The central bay to have runways for two electric cranes, one 20-ton with a 5-ton auxiliary hoist, and one 10-ton hoist. The stock room wing to have a 20-ton crane. The central bay will be for engine erecting and heavy machine tools. One side bay and gallery will be the machine, fitting and metal shops, the other bay will be engine erecting and wheel shops and the stock room for finished parts in the gallery. The erecting bay to be equipped with 15 hand cranes, a crane for each erecting floor. The plans are being rushed and the company hopes that about Jan. 10 it will be prepared to ask bids for the full or separate contracts. The company expects to have shops completed, ready to install tools by May 1, 1910.

SUMMIT, ILL.—The Chicago & Joliet Electric Ry. Co., of Joliet, Ill., plans to erect a fireproof car house at the southwest corner of Archer Ave. and Center St., Summit. The company has not as yet prepared any plans, but it is probable that the building will be built of reinforced concrete. The storage capacity is to be from 15 to 20 cars. J. R. Blackhall, Joliet, is Gen. Mgr.

MOUNT VERNON, ILL.—Walter C. Arthur, Pres., has let a contract to the McCLINTIC-MARSHALL CONSTRUCTION CO., Park Bldg., Pittsburg, Pa., for the construction of buildings for the proposed $1,000,000 plant of the Mount Vernon Car Mfg. Co. The buildings are to be completed in five months.

CHICAGO, ILL.—About $100,000,000 is to be expended by the U. S. Steel Corporation and its subsidiary companies, it is stated, in the territory from South Chicago, Ill., to Gary, Ind., in building new plants and enlarging existing shops next year. E. J. Buffington, Pres. of the Illinois Steel Co., has confirmed the rumors. Formal announcement of the estimates for the construction of new plants and of the enlargement of existing facilities will be made in due time from the main offices of the U. S. Steel Corporation. The extensions mean the employment of possibly 5,000 additional men. It is stated that the Illinois Steel Co. will erect eight new blast furnaces at South Chicago and that the Iroquois Steel Co. has planned to erect at least one new blast furnace. Noted on Oct. 28, under Chicago and Gary, Ind.

Alexander Friend & Co., 148 La Salle St., have acquired a tract of land at West 23d and Robey Sts. and will begin soon after the first of the coming year the erection of seven individual manufacturing plants in a colony on the one site. In all the plan contemplates an investment of about $100,000. The ground space taken has a frontage of 375 ft. in 23d St., with a depth of 125 ft. Each of the plants will front 50 ft., the arrangement permitting of a narrow space between each building. Although employed by concerns which may be wholly foreign to one another, the seven buildings will be so arranged as to cause the various structures to resemble one building. Each building, according to plans now prepared, is to be two stories in height, although this idea may be altered for some of the leasing tenants, with the result that several of the structures may be three or more stories. Throughout the foundations laid will be of sufficient strength to permit of additional stories at such time as the growth of the leasing firm may make additional room necessary. Each plant will be provided with an individual power plant. It is said that those concerns which have taken leases for the buildings are mostly woodworking firms. The site is near the Belt Line and Chicago, Burlington & Quincy railways.

MILWAUKEE, WIS. — The CONRAD RAULF, JR., CONSTRUCTION CO., Patton Bldg., has the mason contract and the FRED LUENZMANN CONSTRUCTION CO., 1912 Prairie St., Milwaukee, the carpenter contract for a $45,000 factory building for Kalt-Zimmers Shoe Co., Reed and Washington Sts. Herman J. Esser, Milwaukee, is Arch.

WAUKESHA, WIS.—GEORGE L. DWINNELL has the general contract for erecting a 1-story brick factory building, on solid concrete foundation, 214 × 110 ft., for the R. L. Kenyon Co., of LaCrosse, Wis., which has decided to move to Waukesha.

RACINE, WIS.—The Racine Mfg. Co., which suffered a loss of $650,000 by fire which destroyed its woodworking plant on Dec. 12, has decided to rebuild at once. George Jagers is Secy. and Mgr.

DELAVAN, WIS.—The Bradley Knitting Co. has awarded the general contract for the construction of a warehouse and box factory building, 112 × 60 ft., three stories high, to the NEWTON ENGINEERING CO., Majestic Bldg., Milwaukee, Wis. Hirschberg, Williams & Walker are Archs.

SHEBOYGAN, WIS.—JOSEPH HAMMES, Sheboygan, Wis., has been awarded the contract for erecting a $75,000 factory building at the plant of the Porcelain Enameling Association of America at Sheboygan. The building will be 300 × 60 ft., solid brick and steel construction.

ST. PAUL, MINN.—The contract for the construction of a factory at University Ave. and La Salle St. has been awarded to C. N. LOVENE, 984 Bayless Ave., city, it is stated, by the Patterson-Sargent Paint Co. Head offices are at Cleveland, Ohio. Plans were prepared by Buechner & Orth, Manhattan Bldg. Cost, $50,000.

Plans are now being prepared by Mark J. Fitzpatrick, Arch., 15 West Ninth St., for the rebuilding of the warehouse, factory and office of the Towle Syrup Co., at Chicago Ave. and Custer St., recently destroyed by fire. It is stated that the plant will be constructed of reinforced concrete and brick. P. J. Towle is Pres. of the company. Cost, $50,000.

ST. LOUIS, MO.—The Mercantile Trust Co., Eighth and Locust Sts., has effected the sale of a plot of ground on McKissock Ave., between Gano and John Aves., to F. C. Stierlin, who will erect a piano factory there at once. The total investment in building and machinery will approximate $75,000. The plans for the building are being prepared by Stephens & Pearson, Archs., Missouri Trust Bldg. The foundations are already in and the building will be completed Feb. 15. The first output of the factory is expected by May 1, 1910. The factory will have a capacity of 1,500 pianos a year. O. C. Nelson has been engaged as Superintendent.

PORT ARTHUR, TEX.—The Port Arthur Traction Co. is preparing plans for the erection of a car house in Port Arthur, to be 113 × 77 ft.

SPOKANE, WASH.—New York, Chicago and Spokane capitalists have financed the People's Portland Cement Co., incorporated for $2,000,000, to erect and operate a 2,000-bbl. plant, costing $500,000, at Squaw Bay on Lake Pend Oreille, 60 miles northeast of Spokane. Arthur S. Ford, of New York, and H. A. Groth, of Chicago, announce that contracts will be awarded soon for a steel and concrete plant with three kilns to be in operation next August. Through Mr. Ford, the company has acquired 350 acres of limestone lands on Lake Pend Oreille, where ample steam and electric railway and steamboat facilities will be afforded as soon as the plant is in operation. A town will be established near the mill site the coming spring and every building in it will be of concrete construction. The plant and quarry will give employment to 100 men at the beginning. L. G. Munroe is Secy. Chamber of Commerce, Spokane.

SAN DIEGO, CAL.—R. P. SHIELDS & SON, Scripps Bldg., San Diego, Cal., have been awarded the general contract by the San Diego Electric R. R. Co. for the erection of car barns to cost $100,000. The structure is to be 195 × 270 ft. and erected on 15th St. Construction will be of reinforced concrete, fireproof.

KERMAN, CAL.—Julius W. Krause, Arch., 3035 Foster St., Los Angeles, Cal., has prepared plans for a reinforced-concrete creamery building to be erected at Kerman for the Kerman Creamery Co. The building will be 120 × 70 ft., one and two stories high, and part of the interior will be plastered on metal lath. Ice and butter-making machinery will be installed, also a cold storage plant. The Armstrong cork insulating system will be used. F. E. Pettes will be Supt. of construction.

TORONTO, ONT.—The Canadian Northern Ry. Co. will erect repair shops and a roundhouse here, according to the Toronto "Globe." Work probably will be started in the spring. D. D. Mann, Toronto, is Vice-Pres.

MISCELLANEOUS CONTRACTS.

(denotes that this work is advertised in Engineering News.)

U. S. RECLAMATION SERVICE.—All news relative to canal projects, etc., will be found under Water Supply—Irrigation.

DITCH.—Madison, Minn.—Bids will be received until Jan. 11, by A. G. Shogren for constructing a tile and open ditch. Estimated cost, $7,578.

DRAIN.—Crawfordsville, Ind.—Bids are asked by the Commissioners of Montgomery County until Jan. 8 for the construction of a large drain. M. L. Neese is Drainage Comr.

STEAM ROLLER.—Pomona, Cal.—The City Council has awarded contract for a 13-ton steam roller to the KELLY ROAD ROLLER CO., of Springfield, Ohio, at $3,600 f. o b. Pomona.

DITCHES.—Grand Falls, Tex.—Bids will be received until Jan. 22 by the Drainage Comrs., H. V. Carr, Secy., for constructing about 20 miles of drainage ditches. A. H. Dunlap is Engr.

DITCH.—Noblesville, Ind.—The ELKHART CONSTRUCTION CO., of Goshen, G. C. Berkey, Mgr., has secured contract for the construction of a ditch in Hamilton County, 25 miles long, at $60,000.

DAM, SLUICEWAYS.—Latchford, Ont.—Contract for the construction of the dam and sluiceways at Latchford has been awarded to W. H. SINCLAIR and D. B. CAMPBELL, of West Toronto, Ont.

DITCHES.—Bottineau, N. Dak.—Bids will be received until Jan. 3 by J. H. Trimble, Secy. Bd. Drainage Comrs., for constructing ditches necessary for the improvement of Oak Creek and adjoining low lands.

SAND, ETC.—Baltimore, Md.—Bids are asked until 11 a. m., Jan. 12, by the Board of Awards for the delivery of sand, gravel, cement and vitrified paving block on new pier No. 6. O. F. Lackey is Harbor Engr.

CEMENT.—Chicago, Ill.—Bids are asked by the U. S. Reclamation Service, Chicago, until 10 a. m., Jan. 10, for furnishing 50,000 bbls. of Portland cement f. o. b. cars at the works of the bidder. R. A. Ballinger is Secy.

STEAM LIGHTER.—New York, N. Y.—No bids were received on Dec. 21 by the Department of Docks and Ferries on Contract No. 1172, for furnishing all the labor and materials required for preparing for a steel steam lighter with all ap[illegible] and mate[illegible] building [illegible]enances.

DITCH.—Princeton, Ind.—C. V[illegible] EN, of Valparaiso, Ind., has been award[illegible] contract for the construction of the Simp[illegible] ditch in Montgomery Township, at $10,250 [illegible] number of other bids ranged from $13,160 [illegible] 14,435.

*REBUILDING RUNWAY.—Ne[illegible] London, Conn.—Bids are asked until 10 a.[illegible] Jan. 10, by the Constructing Quartermast[illegible] S. A., New London, for rebuilding ap[illegible] mately 100 lin. ft. of runway to wharf at [illegible] Mans-field.

DITCH.—Marion, Ind.—Bids are [illegible] until 2 p. m., Jan. 8, by the Drainage C[illegible] nission-er and Superintendent of Construc[illegible] of the Clement T. Cobie ditch for the c[illegible] ruction of the same. D. M. Murphy is [illegible] Con-struction.

REPAIRING SCOWS.—New Yor[illegible] N. Y.—Bids are asked until noon, Jan. 7, [illegible] he Department of Street Cleaning for [illegible] nishing all the labor and materials requi[illegible] or re-pairs to scows Nos. 37 and 40 of th[illegible] epart-ment of Street Cleaning.

DRAINAGE.—Dakota City, Neb.—[illegible] Board of Supervisors will receive offers from engi-neers until Jan. 8 for engineering [illegible] rk re-quired in Drainage District No. 2 [illegible] Dakota County. Jacob F. Lemmer is Secy.

SAND FILLING.—Galveston, Tex.—[illegible]ids will be received until Dec. 30, readvertis[illegible]ent, by John D. Kelley, City Secy., for f[illegible]nishing, delivering and spreading to grade, [illegible] 180,000 cu. yds. of sand filling, to be place[illegible] behind the Galveston County seawall from E[illegible]hth St. and Ave. B to 39th St. and Ave. T.

TIMBER, ETC.—Ottawa, Ont.—Bids are asked until 4 p. m., Jan. 18, by L. [illegible]. Jones, Secy. Dept. Railways and Canals, for the supply and delivery of various articles of timber hardware, castings, oils, etc., for use on the Welland Canal and branches for year 1910.

*EMBANKMENT.—Greenville, Miss.—Bids will be received at the office of the Board of Mississippi Levee Commissioners, Greenville, until noon, Jan. 10, for the construction of about 230,000 cu. yds. of embankment in the Mississippi Levee District. C. H. West is Ch. Engr.

EARTHWORK.—Erie, Kan.—Bids are asked until noon, Jan. 5, by O. M. Johnson, County Clk., for the construction of 160 sections of earthwork in the Delos Johnson levee in Erie and Big Creek Townships, and for the construction of six sewer-pipe openings in the levee.

LEVEE EMBANKMENT, ETC.—Caldwell, Tex.—Bids will be received by the Commissioners of Burleson County Improvement District No. 1 at the office of the County Judge at Caldwell, until Jan. 22, for the construction of about 25 miles of levee embankment and a small amount of drain ditch.

REPAIRING FERRYBOATS.—New York, N. Y.—Bids are asked until noon, Jan. 7, by the Department of Docks and Ferries for Contract No. 1210, for furnishing all the labor and materials required for repairing the municipal ferryboats or other floating ferry property, and furnishing and delivering supplies therefore. Allen N. Spooner is Comr.

SANITARY CARTS.—Jeffersonville, Ind.—Bids will be received until Jan. 8 by Maj. Joseph T. Davidson, Depot Q. M., U. S. A., for furnishing as per Circular No. 499, 15 sanitary carts, U. S. Sanitary Co.'s patent or equal, five to be 4-wheel 2-horse carts and ten to be 2-wheel 1-horse carts.

DITCH.—Fremont, Neb.—Bids were received on Dec. 17 by the Board of County Supervisors, James A. Donahue, County Clk., for constructing an extension to North Bend Ditch No. 2. Contract has been awarded to A. C. MILLER, of Redwood Falls, for 28,627 cu. yds., at 17½ cts. Estimate of County Surveyor, 14,514 cu. yds. at 18 cts. and 14,113 cu. yds. at 20 cts.

WIDENING DITCH, ETC.—Lima, Ohio.—Bids are asked until Jan. 8 by J. F. Cupp, County Surv., for cleaning out and widening a ditch in Richland Township. This is all team work except almost 12,000 ft. of tile from 6 to 18 ins. The work will be let in sections of about 2,000 ft.

REMOVING PIER, ETC.—New York, N. Y.—Bids are asked until noon, Jan. 10, by the Department of Docks and Ferries for Contract No. 1199, for furnishing all the labor and materials required for removing and reconstructing pier and extending the pier at the foot of Morton St., North River, Boro. of Manhattan, known as Pier No. 42, North River, and for furnishing and depositing riprap thereat. Allen N. Spooner is Comr.

CONCRETE MIXER.—Detroit, Mich.—Bids were received from eight manufacturers by the Board of County Commissioners, Detroit, on Dec. 17, for furnishing f. o. b. Detroit, one concrete mixer, with the privilege to the Board of purchasing two or more at the same or a less price each. Contract has not been awarded and it may be some time before any action is taken. Owen Rippey is Secy.

*LEVEE, DITCHES.—Carrollton, Ill.—Bids will be received by the Commissioners of the Eldred Drainage and Levee District, Carrollton, until 2 p. m., Jan. 20, for the construction of levee (1,492,759 cu. yds.), muck ditch (42,220 cu. yds.), drainage ditch, (192,730 cu. yds.). The work is divided into nine sections and bids will be considered upon each section or collectively. The Harman Engineering Co., Engrs., Peoria, Ill.

DREDGING. — Philadelphia, Pa. — The AMERICAN DREDGING CO., Mar. & Mer. Bldg., Philadelphia, on Dec. 20 secured contract from the Enterprise Mfg. Co., Third and Dauphin Sts., to dredge a canal 800 ft. long and 10 ft. deep from the Delaware River back to its property at Cornwallis, Bucks County, Pa., where the company contemplates erecting four reinforced concrete structures for general hardware manufacturing purposes.

*DREDGING.—Chicago, Ill.—Bids were opened on Dec. 15 by the Board of Trustees of the Sanitary District of Chicago, I. J. Bryan, Clerk, for dredging present river channel of the South Branch of the Chicago River, from Lake Michigan to Robey St., and excavating certain parcels of lots adjacent to the Chicago River as follows: (a) excavation disposed of by contractor under Plan A, 236,200 cu. yds.; (b) excavation disposed of by contractor under Plan B, 236,200 cu. yds.; (c) dock removed, 1,500 lin. ft.; (d) pulling and removing foundation piles, 1,000 piles, each (e) total according to (f) total according to b: The Connell Co., 131 La Salle St., Chicago, (b) 13 cts., (c) $1.50, (d) $1, (e) $13,956, (f) $33,956; Great Lakes Dredge & Dock Co., Chicago, (a) 15¼ cts., (b) 15½ cts., (c) $1.25, (d) $1, (e) $38,895, (f) $39,4[illegible] Standard Construction Co., Chicago, (a) [illegible] cts., (b) 15 cts., (c) $2.75, (d) $2.40, (e) $1,563, (f) $41,955. Contract was awarded on Dec. 22 to the FITZSIMONS & CONNELL Co.

BARGE CANAL.—Albany, N. Y.—Bids were received by F. C. Stevens, Supt. Pub. Wks., on Dec. 28, on four additional Barge Canal contracts, as follows: Contract 33, for constructing lock gates, needle beams, guard and sluice gates at various points on the new canal. Contract 44, for constructing a little over seven miles of canal west of Rome. Contract 70, for dredging the channel of the Hudson River from Waterford northerly, a distance of 3¼ miles. Contract 71, for constructing Dam No. 1, above Waterford, and dredging a distance of about four miles.

On Contract 33, three bids were received, the lowest being that of the Penn Bridge Co., of Beaver Falls, Pa., whose bid was $199,640; the engineer's estimate was $183,618.

On Contract 44, three bids were received, the lowest being that of Scott Bros. of Baldwinsville, N. Y., whose bid was $1,748,679; engineer's estimate, $1,926,003.

Shanley-Morrissey, Inc., 527 Fifth Ave., New York, were the low bidders on both Contract 70 and Contract 71. The bid on Contract 70 was $799,636; engineer's estimate, $749,300, and on Contract 71 the bid was $1,615,519; engineer's estimate, $1,502,100.

When Contracts 70 and 71 have been awarded, all of the dredging and excavation work for the Champlain canal will have been placed under contract.

U. S. POSSESSIONS.

*IRRIGATION TUNNEL.—Porto Rico.—Bids will be received at the office of Porto Rico Irrigation Service, Dept. of the Interior, Guayama, P. R., until 2 p. m., Jan. 17, for construction of the Carite Tunnel near Guayama, and the Toro Negro Tunnel near Villalba. The aggregate length of these tunnels being about 6,000 lin. ft. and the estimated cost being about $100,000. B. M. Hall, Ch. Engr. Irrigation Service. Also see item in issue of Oct. 21.

CRANE.—Panama.—Bids were received as follows on Dec. 27 by the Isthmian Canal Commission, for furnishing one 20-ton locomotive coaling crane: American Hoist & Derrick Co., St. Paul, Minn., $8,520; Browning Engineering Co., Cleveland, Ohio, $7,107; Brown Hoisting Machinery Co., New York, $7,710; Exeter Machine Works, Pittston, Pa., $9,800; Industrial Works, Bay City, Mich., $7,000; Interstate Engineering Co., Cleveland, Ohio, $8,750; Ohio Locomotive Crane Co., Washington, $7,100.

TOOL STEEL.—Panama.—Bids were received as follows on Dec. 14 by the General Purchasing Office of the Isthmian Canal Commission, Washington, D. C., for furnishing during the year ending December 31, 1910, carbon tool steel, as follows: 9,448 lbs. Grade A; 48,788 lbs. Grade B; 116,369 lbs. Grade C; 6,148 lbs. Grade D; Bethlehem Steel Co., South Bethlehem, Pa., A, 15.3 cts. per lb.; B, 12.3; C, 6.7; D, 6.7; total, $15,655. The Carpenter Steel Co., Reading, Pa., regular bid, A, 15.5; B, 12.5; C, 9.5; D, 6.5; total, $19,018; also alternative bid "A," A, 12.5; B, 12.5; C, 9.5; D, 6.5; total, $18,735; alternative bid "B," A, 9.5; B, 9.5; C, 6.5; D, 5.5; total, $13,435; ¼ ct. per lb. additional for annealing. Crucible Steel Co. of America, Pittsburg, A, B, 9; C, 6; D, 5; total, $12,594; ¼ ct. per lb. additional for annealing. Firth-Sterling Steel Co., McKeesport, Pa., A, B, 11; C, D, 7; total, $14,982. The Heller Bros. Co., Newark, N. J., A, 9; B, 8; C, 7; D, 6; total, $13,268. The Midvale Steel Co., Philadelphia, all grades, 5.25; total, $9,489; 1 ct. extra for annealing; Horace T. Potts & Co., Philadelphia, C only, 5.2; $6,051; Vulcan Crucible Steel Co., Alequippa, Pa., A, 10.5; B, 10.5; C, 5.5; D, 5; total, $12,822.

Readers' Wants

If you are in the market for material, equipment or supplies, and fail to find it in our advertising pages, send us full particulars, and we will gladly put you in touch with the right parties.

ARTESIAN WELL MACHINERY.—Salonica, Turkey.—Mr. Vital Ojalvo wishes information concerning artesian well drilling machinery capable of drilling to a depth of 1,000 ft. He is also interested in machines for making concrete blocks, together with necessary outfit; also in motor boats. Catalogs may be sent him direct or communication made through Suffern & Company, 90 Wall St., New York.

INDUSTRIAL NOTES.

SHORE & DODGE, Drexel Bldg., Philadelphia, announce their removal to the Washington Bldg., 608 Chestnut St.

CHICAGO BRIDGE & IRON WORKS, 105th and Throop Sts., Chicago, have opened an office at Room 311, 30 Church St., New York.

MR. FRANK ROLFE, Mojave, Cal., c/o Camp Steam Shovel No. 2, Los Angeles Aqueduct, requires general catalogs from hardware dealers.

J. K. DIMMICK & CO., Land Title Bldg., Philadelphia, Pa., dealers in pig iron, announce that Mr. M. R. Gano has been admitted as a member of the firm.

SPRAGUE ELECTRIC CO.—Mr. P. M. Haight, Treasurer of the Sprague Electric Co., New York City, has been elected President of the Electrical Trades Society of New York.

MR. JAMES B. HOGG, M. Am. Soc. C. E., well known in railroad construction engineering, also in mining engineering, is opening an office at 828 Park Bldg., Pittsburg, to be in charge of Victor F. Hammel.

THE CARBOLINEUM WOOD PRESERVING CO., formerly of 351 West Broadway, in order to secure more adequate warehousing facilities as well as more commodious offices, have removed to 182 Franklin St.

THE HARPER MACHINERY CO. test of the J. I. Case Co. 20-HP. traction engine, referred to in Industrial Notes, Dec. 2 issue, showed a speed of 40 miles in 12 hours instead of 20 miles, as stated. We are pleased to give proper credit.

THE EPPINGER & RUSSELL CO., 163 Broadway, N. Y., announce the completion of their Jacksonville, Fla., plant, which is the largest creosoting plant on the Atlantic coast, and is fully equipped with the most up-to-date machinery and appliances procurable.

WE ARE ADVISED that Chenowth Reinforced-Concrete Piles are being used by the Pennsylvania Railroad in foundations of the Pullman Building, Suunyside Yard, Long Island City, N. Y.; also in the Burwind Coaling Station dock, Havana Harbor, Havana, Cuba.

"THE BOARD OF DIRECTORS of Richle Brothers Testing Machine Co., Philadelphia, at a meeting held at their office Dec. 16, declared an annual dividend of six (6) per cent. and an extra dividend of one (1) per cent. upon the capital stock of the company for the year 1909."

SCHALKENBACK & BUDKE, builders of skylights, 402 Claremont Ave., Jersey City, have recently secured contracts for building the skylights of the Danville post-office building, Danville, Ill. Also for the skylight on the new shops of the Hyatt Roller Bearing Co., at Harrison, N. J.

THE O. A. WOOD PRESERVER CO., of Austin, Tex., has compiled a "genealogical tree" the branches showing the more important compounds existing in and derived from coal tar by distillation together with those formed by further chemical treatment. They will send this "tree" to interested parties upon application.

THE ROBINS CONVEYING BELT CO. is the title of a new company formed by the consolidation of the Robins Conveying Belt Co. and the Robins New Conveyor Co. The President is Thomas Robins, inventor of the system and founder of the original company. The engineering department is in charge of C. Kemble Baldwin, Ch. Engr. The company has offices in New York and Chicago.

THE PIERCE ARROW MOTOR CAR CO., of Buffalo, N. Y., has placed a second contract for new buildings with the Aberthaw Construction Co., of Boston. The new contract is for a building four stories in height, 180 ft. long, and additions to the power plant, to match the rest of the plant in general design, and of fireproof reinforced-concrete construction throughout. The entire output of the Pierce factory is sold for a year ahead.

THE PENNSYLVANIA R. R. CO. announces the following equipment ordered by the company and its subsidiary companies during 1909: Phila., Balt. & Wash. R. R., 366 freight cars, 13 locomotives; Northern Central Ry. Co., 967 freight cars, 5 locomotives; Pennsylvania R. R., 13,078 freight cars, 298 passenger cars and 57 locomotives; West Jersey & Seashore R. R., 47 freight cars; Pennsylvania Lines West of Pittsburg, 10,400 freight cars, 47 passenger cars and 140 locomotives.

THE L. A. GREEN COMPANY, 419-20 Park Building, Pittsburg, Pa., which concern has been in business at the above address since 1905 under the management of L. A. Green, has just secured a charter under the name of L. A. Green Company. The company deals in new and relaying rails, machinery, equipment and supplies for mills, mines and manufacturers, also manufacture switches and frogs. The officers of the company are L. A. Green, Pres. and Treas.; O. D. Alcorn, Vice-Pres., and N. A. Green, Secy.

THE WESTERN STATES PORTLAND CEMENT CO., New York Life Bldg., Kansas City, Mo., announces that Mr. E. R. Stapleton (formerly of the Iola Portland Cement Co.), has been appointed to take charge of the sales of the company's product. He succeeds Mr. T. F. McClaren, who has resigned on account of ill health.

The Canada Cement Co., Ltd., have opened their general offices in the Imperial Bank Bldg., Montreal. They will be glad to receive catalogs of interest to the cement industry. The Canada Cement Co., Ltd., own or control eleven cement plants.

THE VULCAN STEAM SHOVEL CO., Toledo, Ohio, has built for Laurin & Leitch, of Montreal, a dipper dredge with a 1¼-yd. bucket, which is being used to dredge a channel for the intake pipe to the new crib of the Montreal water-works. The hull is 80 x 40 ft. The main engines have double cylinders 10 x 12 ins., and a cast steel hoisting gear with cut teeth. The swinging engines are 8 x 9 ins. The A-frame and boom are of steel construction. In soft material the machine can handle a 2½-yd. bucket, but the smaller bucket is used on the present work because the material handled is rock.

THE COMPETITION which has been conducted by the Cement Products Exhibition Co., 115 Adams St., Chicago, for a design for an ornamental centerpiece to be erected at the Third Annual Cement Show, was successfully closed on Dec. 1. Architects of repute, engineers, contractors, sculptors and designers from New York to San Francisco, participated in the competition.

Prizes were awarded as follows:

First prize, of $200, to Mr. Wilbur Karl Howenstein, of Chicago.

Second prize, of $100, to Mr. Ernest V. Price, of Spokane, Wash.

Third prize, of $50, to Mr. George Aswumb, of Chicago.

THE C. O. BARTLETT & SNOW CO. report the following recent sales: Farmers' Lime & Fertilizer Co., Canton, Ohio, one complete lime and stone crushing plant, erected at their works at Howenstein, Ohio; Canfield Oil Co., Cleveland, Ohio, complete outfit for manufacturing paint; National Carbon Co., New York city, elevators and conveyors for their Fostoria plant; D. H. & L. Stadler, Cleveland, Ohio, complete elevating and conveying outfit for handling garbage; Lonyo Brick Co., Detroit, Mich., one brick dryer, capacity 16,000 brick a day; Walker-Stratman Co., Pittsburg, Pa., steam dryer and machinery for burning pulverized coal; Pennsylvania Salt Co., Philadelphia, Pa., elevating machinery; Portage Silica Co., Youngstown, Ohio, machinery for disintegrating and grading gravel. Also that the large coal handling plants they are erecting for the McGillivray Creek Coal & Coke Co., Coleman, Alta. and the West Canadian collieries, Blairmore, Alta., are very nearly completed.

THE REPAIR DEPARTMENT of the Westinghouse Electric and Manufactuirng Co., of Pittsburg, has been housed in a new eight-story building having some 220,000 sq. ft. floor area. For some time past the need of a special department to handle repair work independently of all other work, so as to insure prompt attention and quick deliveries, has been strongly felt, but the crowded condition of the works required the erection of another building before such a department as the management had in mind could be established. On account of the fact that there was no large space on the company's 47-acre plot unoccupied, it was necessary, in the erection of a new building, to depart from the established two-story type of structure and erect a higher building. The available space was 110 ft. wide by 420 ft. long, and the building is 70 ft. by 400 ft. The distance from the ground to the top of the cornice is 130 ft. The building is of skeleton self-contained steel and brick construction, and is as near fire-proof as a building can be made. Working space is afforded for 1,500 persons.

THE ALLIS-CHALMERS CO., Milwaukee, Wis., announces that its San Francisco office has been moved from 500 Mission St. to the Byron Jackson Bldg., Second and Natoma Sts., in order to accommodate its increased selling force. The tetritory is in charge of Mr. R. B. Elder, who has been engaged in engineering on the Pacific Coast for 14 years. The company has an order from the Southren California Cement Co., at Riverside, Cal., for one No. 4 Style K Gates crusher with manganese steel heads and concaves, and steel gears and pinions; one set of 40 x 15-in. Anaconda type crushed rolls with manganese steel roll shells; one 40 x 12 x 144-in. Gates revolving screen with manganese steel screen sections; one 48 x 240-in. Gates revolving screen with manganese steel screen section, a 16-in. Gates wall type feeder; a Gates style B elevator 40 ft. between centers, and a 12-ton overhead trolley. From the Fredonia Portland Cement Co., Fredonia, Kan., it has an order for two 6 x 18-ft. Gates dry grinding bevel gear mills having a canacity of 400 bbls. per 24 hours of finished material, and fitted with two Gates rotary feeders.

THE E. KEELER COMPANY, of Williamsport, Pa., has been awarded the contract by the Penna. R. R. Company for three 408-HP. Keeler Water Tube Boilers built for a working pressure of 180 lbs. per square inch. These boilers will be equipped with Green Chain Grate Stokers and the setting will be especially designed for this installation for the elimination of smoke in burning soft coal. The contract includes a self-supporting steel stack lined with brick throughout its height, together with the smoke flues and the brick settings for the boilers. This equipment will be installed in the new classification yards at Northumberland, Pa. This company has also received an order from the U. S. Engineer office at Boston, Mass., for three 150-HP. Water Tube Boilers to be installed in fortifications at Manila. These boilers will be equipped with superheaters. This contract follows a contract for six boilers which was placed early in the year. These boilers are now being installed at Fort Cal.; Fort Stevens, Ore., and Fort Casey, Wash. The Keeler Company has also been awarded the contract for one 500-HP. Water Tube Boiler for the water department of the city of Fort Worth, Tex.

THE ALLIS-CHALMERS CO., Milwaukee, Wis., reports that it has been awarded a contract for mine pumping equipment by the Lake Superior Iron & Steel Co., of Sault Ste. Marie, Ontario. There will be three two-stage horizontal shaft centrifugal pumps each having a capacity of 4,200 gallons per min. against a head of 160 ft. The suction and discharge nozzles are each 12 ins. in diameter, and the pumps will be fitted with balancing disks to prevent end thrust. Each pump will be direct connected to a 260-HP., 2,200-volt, 25-cycle, three-phase constant-speed induction motor of the open squirrel-cage type. Potential starters will also be furnished. The Panhandle Lumber Co., of Spirit Lake, Idaho, has placed an order with Allis-Chalmers Co., which includes a turbo-generator set which will furnish 600 KW. at 80% power factor, 480-volt, 60-cycle, three-phase current when running at 3,600 r. p. m. on 120 lbs. steam pressure and 28 ins. vacuum. The condensers will have motor operated centrifugal pumps for cooling water and ejection. Excitation current for starting and reserve will be furnished by a 25-KW. non-condensing turbo-generator set, and for operating a 22½-KW. motor generator set will be supplied. The Prairie Pebble Phosphate Co., Mulberry, Fla., has placed an order for one 300-KW., 2,300-volt, 3-phase, 60-cycle, 164 r. p. m. generator and one 18-KW., 120-volt, 725-r. p. m. exciter.

THE STRAUSS BASCULE & CONCRETE BRIDGE CO. report the following orders taken during the past year: Railway bridges, Florida East Coast Ry. at Ft. Lauderdale, Fla., over New River, 63' 6" single leaf, single track; National Transcontinental Ry., at Winnipeg, Man., over Red River, 129' 6" single leaf, double track; Peoria & Pekin Union Ry., at Peoria, Ill., over Illinois River, 160' single leaf, double track; Erie R. R. Co. (New York Division), over Hackensack River, 152' single leaf, double track; Cape Cod Construction Co. (for N. Y., N. H. & H. R. R.), over Cape Cod Canal, 160' single leaf, double track; Erie R. R. Co. (N. Y. S. & W. R. R.), over Overpeck Creek, at Little Ferry, N. J., 55' 5" single leaf, double track; C. & W. I. R. R., at Chicago, Ill., over Calumet River, 188' single leaf, double track; Canadian Northern Ry., at Winnipeg, Man., over Assiniboine River, 92' single leaf, double track; Niagara, St. Catharines & Toronto Ry., over Welland Canal Feeder, 46' single leaf, single track; Northern Pacific Ry. over Duwamish River, at Seattle, Wash., 160' single leaf, single track. Highway bridges—City of Ottawa, Ill., over Illinois River, 118' single leaf; Cape Cod Construction Co., at Buzzards Bay, Mass., over Cape Cod Canal, 160' single leaf; Department of Railways and Canals, Canada, over Trent Canal, at Lindsay, Ont., 73' single leaf; City of St. Petersburg, Russia, over Neva River, 200' clear span bascule, double leaf. The Palace bridge at St. Petersburg will require a number of years in its construction, being an unusually monumental work. The remaining bridges will probably all be in service by next spring, including the C. & W. I. R. R. bridge across the Calumet River, which will be a single leaf structure of unusual proportions. There are also now nearing completion the Polk Street bridge for the city of Chicago, the Walnut St. bridge for the city of Green Bay, Wis., and the Illinois River bridge for the city of Ottawa, Ill., which will make the total number of Strauss trunnion bridges in active service 13. Of these the 170-ft. double track, single leaf bridge for the C. & N. W. Ry. at Kinzie St., Chicago, which was put in service during the month of September, 1908, has an average record of 1,000 bridge movements per month and of 1,100 train movements per day. In a recent test it was found that the average horsepower required for the operation of this structure was 30, with a minimum of 14 and a maximum of 78.

TRADE PUBLICATIONS.

CONCRETE CONSTRUCTION.—The Aberthaw Construction Co., Boston, Mass. Pp. 15, 9 x 6 ins.; illustrated.

This is another of the sets of photographs of work accomplished that this company has been issuing recently. The examples are well chosen and the mechanical details of reproduction carefully executed.

SMALL ELECTRIC MOTORS.—The Emerson Electric Mfg. Co., 2024 Washington Ave., St. Louis, Mo. Paper; 7 x 10 ins.; pp. 14; illustrated.

The motors are described as applied to the operation of household vacuum cleaners, blowers for house furnaces, ozone generators at the Chicago public library, electro-pneumatic pumps, etc.

STOPING DRILLS.—The J. Geo. Leyner Engineering Works Co., Littleton, Colo. Paper; circular; 8½ x 11 ins.; illustrated.

The Leyner stoping drill is illustrated and briefly described in this sheet, which is accompanied by a circular letter setting forth the special features and advantages, and giving also some particulars of tests.

FOUNDATION AND UNDERPINNING WORK.—George W. Jackson, Inc., Chicago, Ill. 4½ x 9½ ins.; pp. 18 and folder map. Illustrated.

This booklet is made up of a series of views showing the progress of work on the construction by the George W. Jackson Co. of some foundations on the site of the new Chicago terminal of the Chicago Northwestern Ry.

REINFORCED-CONCRETE PILES.—American Concrete Piling Co., Philadelphia Eand Title Bldg. 6 x 9 ins.; pp. 61; illustrated.

The "Peerless" pile, described in this pamphlet is made by driving first a hollow reinforced-concrete shell, cibsed at the lower end with a cast-iron point, and then, after removing the core, filling the inside with concrete. It has a number of variations which are fully described.

GRAPHITE.—Joseph Dixon Crucible Co., Jersey City, N. J. Paper; 6 x 9¼ ins.; pp. 59; illustrated.

Every two or three years the Dixon Company republishes "Graphite as a Lubricant," which has become a standard work with them. Each new edition is thoroughly revised and brought fully to date. The present edition is more compact than its predecessor, and deals especially with the lubrication and treatment of power-house machinery. It is printed in big, readable type with liberal margins.

POLYPHASE INDUCTION MOTORS.—Wagner Electric Mfg. Co., St. Louis, Mo. Paper; 8 x 10½ ins.; pp. 8; illustrated.

The features claimed for this type of motor are high torque with low current at starting, the operating features of the squirrel-cage induction motor, and simplicity of control. It resembles the squirrel-cage type in the stator winding, and the single-phase type in its rotor. The motors are built in sizes of 1-HP. to 50-HP.

REINFORCED-CONCRETE DOCKS.—Raymond Concrete Pile Co., New York. 8 x 11 ins.; pp. 26; illustrated.

As described heretofore in the columns of Engineering News, the city of Baltimore is just completing a system of reinforced-concrete bulkheads and docks which are unique in construction and effective in results. In this work a number of Raymond piles have been used, so the company making those piles has had this very complete description of the work printed under the title "Baltimore's Municipal Dock Improvements; A description of the Financial and Engineering Features of the Work."

DRAFTING TABLES AND FILING CASES.—Economy Drawing Table Co., Toledo, Ohio. Paper; 6 x 9 ins.; pp. 48; illustrated.

A variety of designs of tables are shown, ranging from large sizes with numerous drawers for instruments and drawings, to the simple designs used in technical schools, etc. One of the specialties is a drafting board pivoted on a base board so that it can be set at any angle with the T-square held against the fixed head. The filing cases are of the sectional type, with different arrangements of drawers, and there is a special cabinet for a number of drafting boards and drawers for instruments.

PRESERVATION OF CEDAR POLES.—The Valentine-Clark Co., Chicago. Paper; 3½ x 6¼ ins.; pp. 7; illustrated.

This pamphlet sets forth the advantages of the open-tank system of preservative treatment in connection with the use of "C. A." wood preserver, which is a compound having carbolineum as its base. The company has built a plant for this process and treats the poles from the butt to a point 1 ft. above the ground line.

WESTINGHOUSE DIARY FOR 1910.—Westinghouse Electric & Manufacturing Co., Pittsburg, Pa. Flexible leather; 2½ x 5½ ins.; pp. 96; illustrated.

This little booklet, distributed annually by the Westinghouse Co. for the past six years, has been revised in the present issue by the inclusion of so much additional matter that it has really become a miniature engineer's pocket-book. A considerable amount of the information given is of a class which is not often found in the ordinary pocket-books.

THE PIERCE-ARROW MOTOR CAR.—The Pierce-Arrow Motor Car Co., Buffalo, N. Y. Stiff paper; 9 x 12 ins.; pp. 32; illustrated.

The development of the internal-combustion engine and its appurtenances, and the development of the use of high-quality alloy steels, are two things which the mechanical engineering of the present day owes to the automobile industry. Any mechanical engineer cannot fail to find interesting the illustrations and description given in this catalog.

THE RUMELY OIL PULL TRACTOR.—M. Rumely Co., La Porte, Ind. Paper; 7 x 10¾ ins.; pp. 15; illustrated.

The title on the cover of this pamphlet is "Toiling and Tilling the Soil." The pamphlet describes a new type of traction engine equipped with a two-cylinder internal-combustion engine which uses kerosene for fuel. It is claimed that this engine is adapted for general use on a farm, and that it can plow 20 acres a day at a cost, for daily operating, including the investment, of $13.20. The engine is equipped with the Secor carburetor, and the price quoted in the catalog is $2,800.

WOODEN AND STEEL TANKS AND WATER TOWERS.—W. E. Caldwell Co., Louisville, Ky. Paper; 5¾ x 8¾ ins.; pp. 40; illustrated.

A special of this company's work is the construction of steel tanks with hemispherical bottoms, and supported on steel towers. Wooden tanks on wooden or steel tanks are described also, as well as small wooden and galvanized tanks for farm and general use. Information is given as to wood for tanks, methods of hooping, tank fixtures, etc. There are tables of sizes and prices, and a list of towns whose water-works are using this company's steel or wooden tanks on towers.

LIST OF CONTRACTS PENDING.

Light, Heat and Power Plants.

1- 3 Electric work, etc., Portland, Me.12-23
1- 4 Elec. & Gas fixtures, eNw York..12-23
1- 4 Elec. light bonds, Greenville, Ga..12-30
1- 7 Elec. fixtures, etc., New York....12-30
1-14*Trans. lines, Richmond, Va.....12-30
1-17*Light plant, Macon, Miss.....12-30
1-20 Elec. light system, Fort Williams, Me 12-30
1-21 Remodeling power plant, Washington, D. C. 12-23
2-15*Equipment, Winnipeg, Man.....12-30

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12-31*Bridge, Woonsocket, R. I.....12-23
12-31 Viaduct work, Cincinnati, Ohio...12-30
1- 3 Bridges, Stockton, Cal.....12-23
1- 3 Bridge work, St. Clairsville, Ohio.12-23
1- 4*Bridge, Cohoes, N. Y.....12-16
1- 4*Bridge, Merced, Cal.....11-25
1- 4 Bridge, Lamar, Wash.....12-30
1- 7 Abutment repair, Cincinnati, O..12-16
1-11 Bridges, York, Neb.....12- 9
1-11 Bridges, Geneva, Neb.....12-30
1-12 Bridges, Grand Island, Neb.....12-23
1-14 Bridge, Cincinnati, Ohio.....12-23
1-15 Bridge, Florence, Ariz.....12-16
1-15 Bridge, Dallas, Tex 12-16
1-17 Bridge, West Union, Ohio.....12-30
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1-20 Bridge, San Antonio, Tex.....12-30
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12-31 Building, Vallejo, Cal.....12- 2
1- 2 Plans, etc., Phoenix, Ariz.....12-16
1- 3 Plumbing, etc., Portland, Me....12-23
1- 3 Schools, New York 12-23
1- 3 Buildings, Mont Alto, Pa 12-23
1- 4 Grain elevator, Evansville, Ind. .....(Mfg. Pl.).12-30
1- 5 Engine house, Baltimore, Md.....12-30
1- 6 Post-office, Trenton, N. J.....12- 2
1- 7 Building, New York.....12-30
1- 8 Buildings, Columbus, Ohio.....12-23
1- 9 School, Shreveport, La.....12-30
1-10*Post-office, Lima, Ohio 12- 2
1-10*Storehouse, Ft. Monroe, Va.....12- 9
1-10 Stable, Ft. Mackenzie, Wyo.....12-16
1-11 Dormitory, New York 12-30
1-11 Post-office, Chester, Pa.....12- 9
1-12*Post-office, etc., Bristol, Tenn....12- 2
1-13*Post-office, Manchester, N. H....12- 9
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1-17*Post-office, Henderson, N. C....12-16
1-25*Post-office, Pawtucket, R. I....12-23
1-26*Building, Ft. Monroe, Va.....12-30
1-31*Post-office, Goldsboro, N. C.....12-30
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2-14 Post-office, Lead, S. Dak 12-23
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1- 3 Water-works, Cathlamet, Wash..12-16
1- 3 Repairing pump-house, Fort Robinson, Neb 12-23
1- 3 Water-works, Colusa, Cal.....12-30
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1- 4 Tank, Dodgeville, Wis.....12-23
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1- 6*Hydrants, etc., Parkersburg, W. Va 12-23
1- 9 Headgate, Lamar, Colo 12-23
1-10 Water-works, Broken Arrow, Okla 12-23
1-10 Pumping plant, Petersburg, Va...12-30
1-11 Water-works, Cawker City, Kan..12-30
1-11*Aqueduct, New York 12-23
1-12 Filter house, Wilmington, N. C...12-23
1-12 Pipe, Vancouver, B. C.....12-30
1-12 Water-works, Hebron, Neb.....12-30
1-15 Pumps, Stratford, Ont.....12-30
1-17*Irrigation tunnel, Porto Rico 12-30
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1-22*Wells, etc., Jackson, Miss.....12-16

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1- 3 Sewer, Chambersburg, Pa.....12-30
1- 3 Sewer, Perth Amboy, N. J.....12-30
1- 3 Sewer, Muskegon, Mich.....12- 9
1- 3 Sewers, Lawrence, Kan.....12-23
1- 5*Sewage well, Batavia, N. Y.....12-23
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1-11*Sewers, Denver, Colo 12-23
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1-12 Sewer, Holton, Kan.....12-16
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1-14*Sewers, Denver, Colo. 12-23
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2-15*Sewer outlet, etc., Toronto, Ont..12-23
2-16*Sewer system, Lawton, Okla. 12-30

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1- 1 Road, May's Landing, N. J 12-23
1- 3 Boulevard, Golden, Colo.....12-30
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1- 3 Paving, Ottumwa, Ia.....12-30
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1- 5*Macadam, etc., Lenoir, N. C. 12- 9
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1- 6 Paving, Guthrie, Okla.....12-30
1- 6 Sidewalks, etc., New Rochelle, N. Y 12-30
1- 7 Road, Dunlap, Ohio.....12-30
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1-10*Paving, Elk City, Okla 12-23
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1- 1 Ditch, Frankfort, Ind 12-23
1- 3 Dredge, Panama 12- 2
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1- 3 Ditches, Bottineau, N. Dak.....12-30
1- 4*Dredging, Michigan City, Ind...12- 9
1- 4 Cement, riprap, etc., New York. 2-23
1- 5*Floating dock, Vicksburg, Miss..12- 2
1- 5*Public hearing on harbor lines, New York 12-23
1- 5 R. R. trestle, Memphis, Tenn. .....(Elec. Rys) 12-30
1- 5 Earth work, Erie, Kan.....12-30
1- 6 Ditch, Forest City, Iowa 12-23
1- 6 Drainage ditches, St. Paul, Minn.12-23
1- 7 Repairing ferryboats, New York.12-30
1- 7 Repairing scows, New York.....12-30
1- 8 Drain, Crawfordsville, Ind.....12-30
1- 8 Widening ditch, etc., Lima, Ohio..12-30
1- 8 Sanitary carts, Jeffersonville, Ind.12-30
1- 8 Drainage, Dakota City, Neb.....12-30
1- 8 Ditch, Marion, Ind.....12-30
1- 8 Earth work, Ft. Leavenworth, Kan 12-23
1- 8 Dredging, quay walls, New York.12- 9
1-10*Rebuilding runway, New London, Conn 12-30
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1-10 Cement, Chicago, Ill.....12-30
1-10 Removing pier, etc., New York...12-30
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1-12 Sand, etc., Baltimore, Md.....12-30
1-15 Marine railway, Key West, Fla..12-16
1-15 Tile drain, Boone, Iowa 12-23
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1- 5 Junior Engr., Draftsman, Washington, D. C. 12-23
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1- 5 Junior Chemist, Washington,D.C.12-23
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1-12 Inspector, New York, N. Y.....12-23
1-12 Engr.-Physicist, Washington, D. C.12-23
1-19 Asst. Chemist, Washington, D. C.12-23
1-19 Agricultural Asst., Wash., D. C..12-23
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Plans and Specifications on File.

The following plans (P.) and Specifications (S.) are on file (for reference only unless otherwise noted) at office of The Engineering News Publishing Co., 220 Broadway, New York.

Bids close.	Work.	See issue.
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1- 5	*Floating dock, Vicksburg, Miss. .....(S.)	12- 2
1-17	*Irrigation, Porto Rico...(P.& S.)	10-21
1-18	*Superstructure, Winnipeg, Man.. .....(P. & S.)	12-10

For other Proposal Advertisements see pages 51, 52, 53, 54, 56, of Advertisements and Construction News page 234.

STRUCTURAL STEEL AND IRON WORKS.

Elmira, N. Y.

Sealed proposals for Furnishing Structural Steel and Iron Work, exclusive of erection for the hospital building, for the New York State Reformatory, Elmira, N. Y., and for the Structural Steel and Iron Work, exclusive of erection, for the mess hall and kitchen, at the Eastern New York Reformatory, Napanoch, N. Y., will be received by Col. Joseph F. Scott, Superintendent of Reformatories, at the New York State Reformatory, Elmira, N. Y., up to 12 o'clock m., on the 15th day of January, 1910, when they will be opened and read publicly.

Proposals shall be accompanied by a certified check in the sum of 5% of the amount of bid, and the contractor to whom award is made will be required to furnish surety company's bond in the sum of 50% of the amount of contract within 30 days after official notice of award of contract and in accordance with the terms of specifications Nos. 1313 and 1323. The right is reserved to reject any and all bids.

Drawings and specifications may be consulted and blank forms of proposal obtained at the office of the Superintendent, and at the office of the State Architect. Complete sets of plans and specifications will be furnished to prospective bidders upon reasonable [illegible] to and in the discretion of the [illegible] Architect, Franklin B. Ware, Albany, N. Y.

LEVEE AND DI[illegible]CHES.

ELDRED DRAINAGE [illegible] D LEVEE DISTRICT

[illegible]rollton, Ill.

Sealed bids will be rece[illegible] at Carrollton, Illinois, until 2.00 [illegible]lock P. M. January 20, 1910, for the [illegible]nstruction of Levee (1,492,759 cu. yds. Muck Ditch (42,220 cu. yds.), Drainage Ditch (192,730 cu. yds.). The work [illegible]divided into nine sections and bids will [illegible]e considered upon each section or coll[illegible]vely.

Bids must be accompanied by cash or certified check in an amou[illegible]equal to 5% of the value of the work bi[illegible]upon.

Plans and specifications [illegible]on file and may be seen at the office [illegible] the County Clerk in Carrollton, Illinois, at the office of the Harman Engineering Co., No. 129 Fredonia Ave., Peoria, Illin[illegible] and at the office of Boyle, Mott and H[illegible]ght, No. 218 LaSalle Street, Chicago, [illegible]. Copy of Specifications, Form of Bid, Form of Contract and Form of Bond may be procured from the Engineers.

Payments will be made in cash monthly, to the extent of 70% of the value of the work done, and on completion of any continuous 1,000 feet or more of the work, 20% additional. 10% will be retained on each section until the completion and acceptance thereof.

The Commissioners reserve the right to reject any or all bids.

EDWARD BOYLE,
B. C. HODGES,
LEE McFARLAN,
Commissioners.
Carrollton, Illinois.
HARMAN ENGINEERING CO.,
Engineers,
Peoria, Illinois.
Dec. 22, 1909.

CATSKILL AQUEDUCT.

Contract 41.

Sealed bids will be received by the Board of Water Supply in Room 910, 299 Broadway, New York, until 11 A. M., on January 18, 1910, for Contract 41, for furnishing and installing twenty 5-foot by 15-foot sluice-gates, twenty operating mechanisms, eight 66-inch stop-disk frames, four 66-inch stop disks and three sets of drive-shafting, for various structures along the line of the Catskill aqueduct, at Mt. Vernon, Westchester County, and Brown's Station, Ulster County, New York.

At the above time and place the bids will be publicly opened and read. Pamphlets containing information for bidders, and contract drawings can be obtained at Room 906 at the above address by depositing the sum of ten dollars ($10) for each pamphlet. For further particulars see Information for Bidders.

JOHN A. BENSEL,
President.
CHARLES N. CHADWICK,
CHARLES A. SHAW,
Commissioners of the Board of Water Supply.
J. WALDO SMITH,
Chief Engineer.
THOMAS HASSETT,
Secretary.

Situations Open

WANTED—Designer and detailer of reinforced concrete with some experience; Chicago office. Mention salary, education and date available. Address "L. A. 27," Engineering News, New York. 27-3

WANTED—Designer of structural steelwork for railroad bridges; Middle West. State salary, education, experience and date available. Address "M. A. 27," Engineering News, New York. 27-3

WANTED—Salesmen calling on power plant trade to handle small line of steam specialties for everyday use, by established manufacturing concern with reputation for high-grade material. Liberal commissions to energetic, reliable men. Address W. T. JAMESON, 100 Surrey Rd., Mansfield, Ohio. 27-3

Reinhardt's TECHNIC OF MECHANICAL DRAFTING Shows how to do it right Price, $1.00

In this Issue: A 6,000 HP. Water Brake for Measuring a Steam Turbine's Power—The New Delaware River Concrete Bridge, D., L. & W. R.R.—Tests of Locomotive Headlights—Index to Volume 62.

GENERAL LIBRARY, UNIV. OF MICH. DEC 31 1909

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Ornamental Iron Work
for Buildings
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136th Street and Southern Boulevard
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Advertisement is on page 14.

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Soft Steel Weldless Flanges
Forged and Rolled from
SOLID STEEL INGOTS
Suitable for High-Pressure Steam, Water or Gas Lines
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See our advertisement on page 4

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Monmouth Sewer Pipe
Made by
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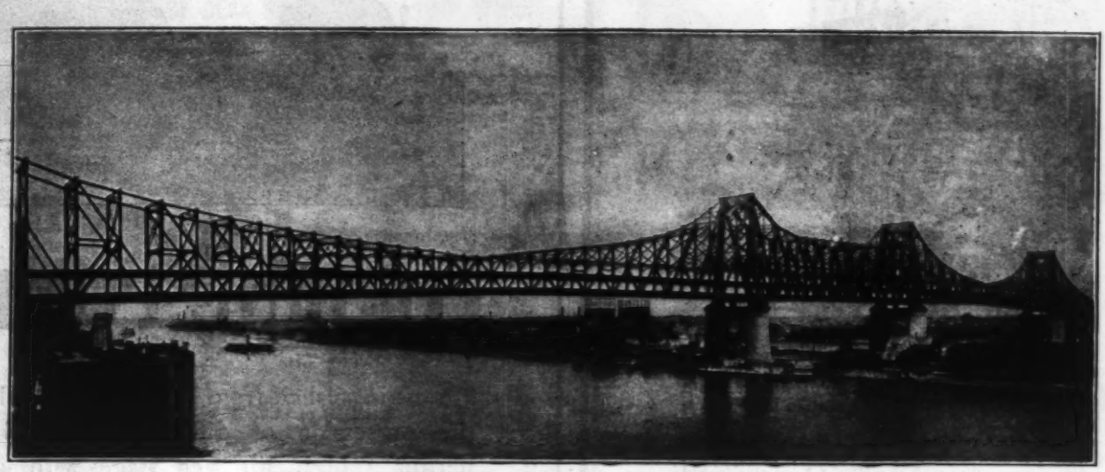

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ITS ADVANTAGES

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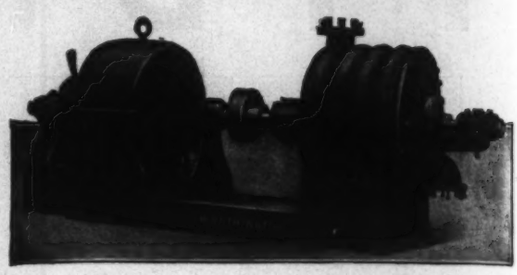

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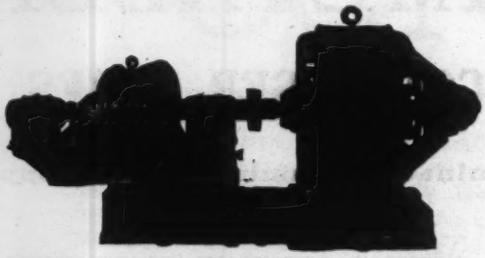

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are heavily constructed. The case is horizontally split and provided with large self-oiling bearings.

These Pumps are perfectly balanced and operate with the highest efficiency. All parts are built to gauge and are interchangeable.

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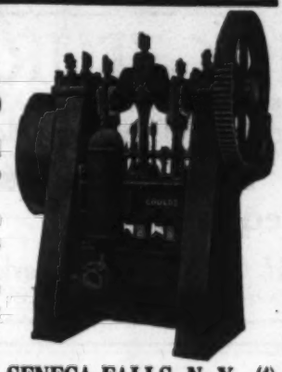

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Pumps

For side or bottom suction and with reversible lever and spout. Sand, gravel, etc., will not clog the valves. Rubber diaphragm substituted for plungers.

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Steam or Electric Driven or Geared from Shaft, are offered for service in elevating large quantities of water from deep Artesian Wells. Single Stroke Pumps for lighter deep well work.

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Unequalled for handling muddy, gritty water with unskilled labor.

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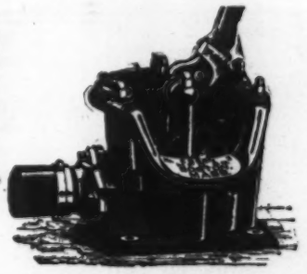

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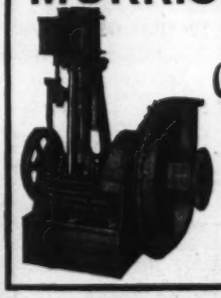

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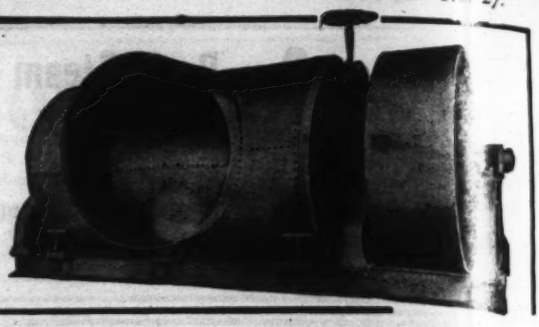

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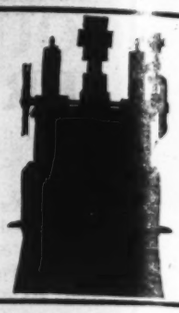

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CENTRIFUGAL PUMPING MACHINERY SPECIAL HEAVY MACHINERY
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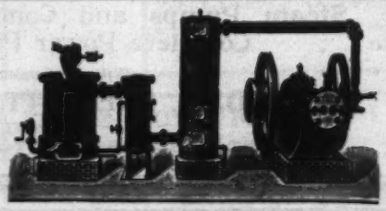

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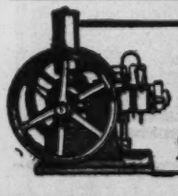

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Hercules Diaphragm Trench Pumps

L-682

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Nos.	1	2	3
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Capacity, per hour,	3000	4000	6000

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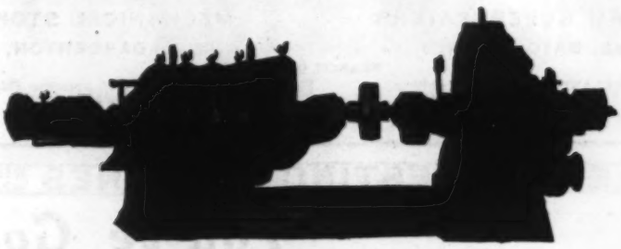
Jeanesville Turbine Pumps



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Pumps for Every Service

Steam Power and Turbine Pumps

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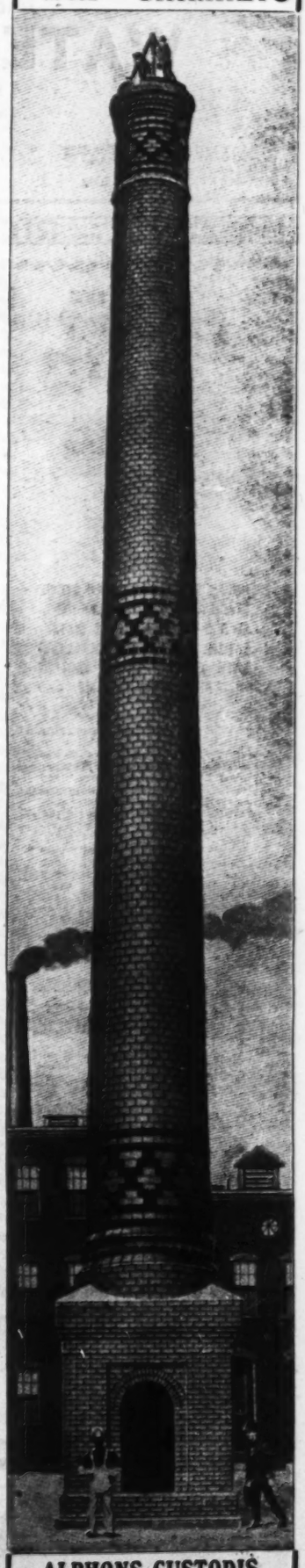

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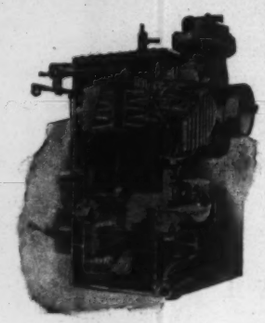

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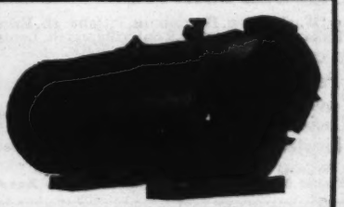

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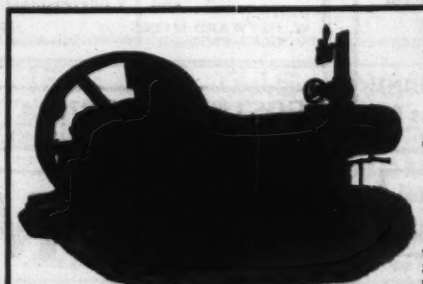

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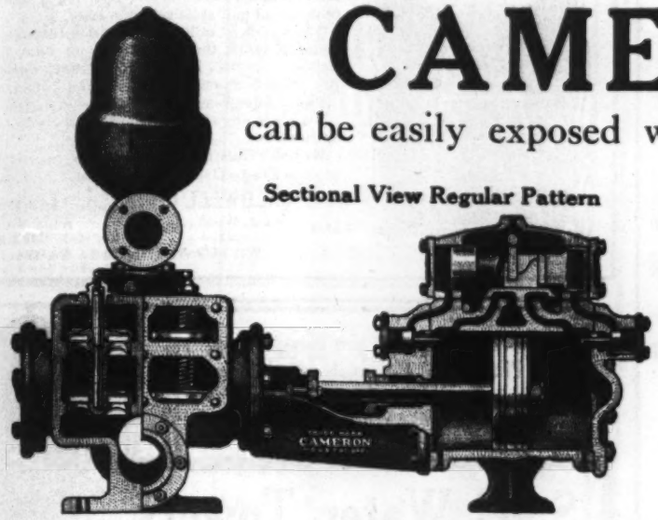

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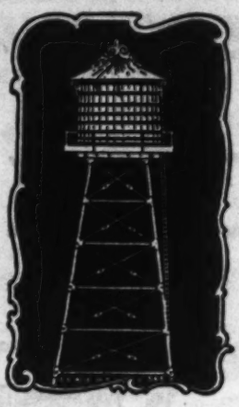

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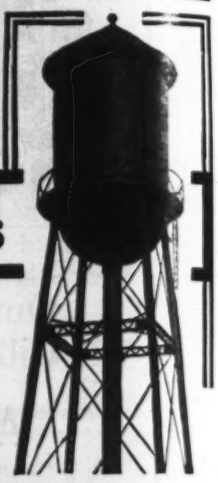

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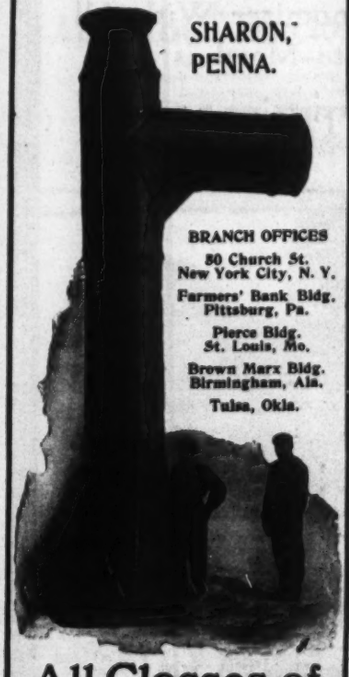

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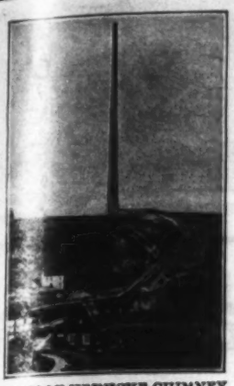

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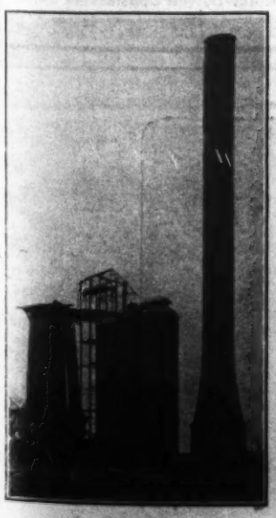

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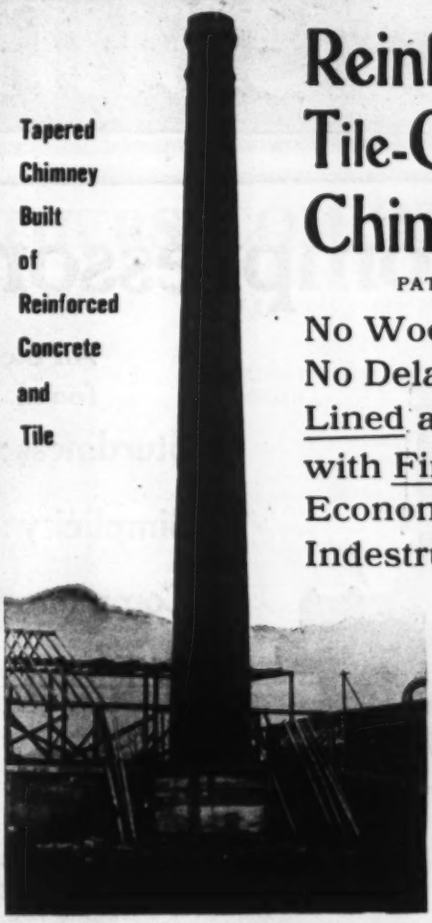

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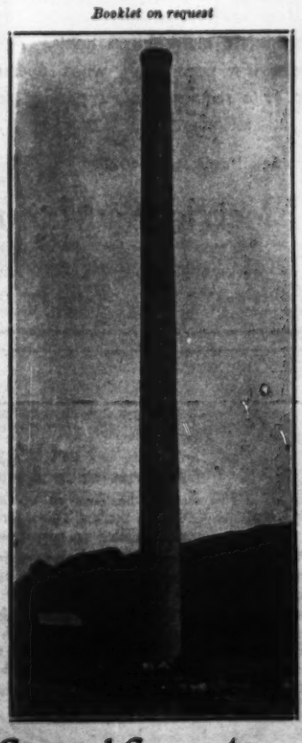

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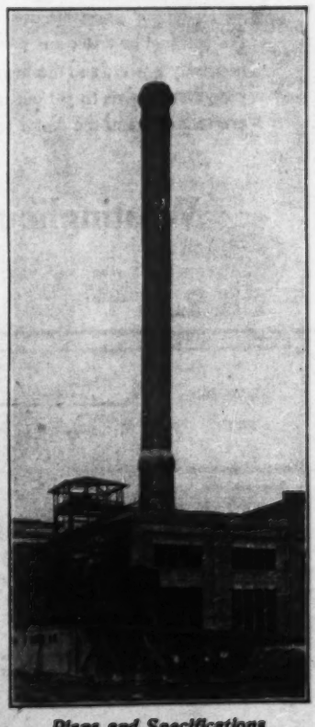

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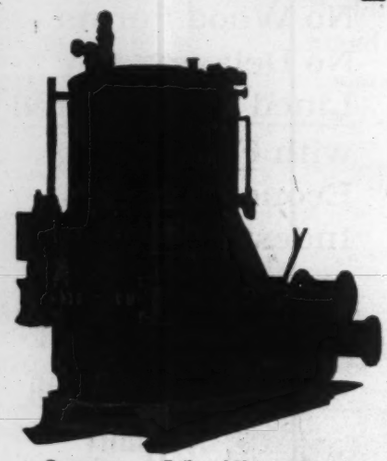

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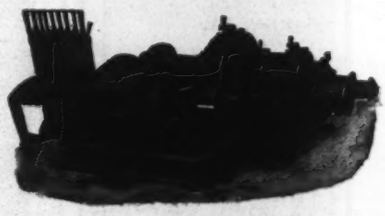

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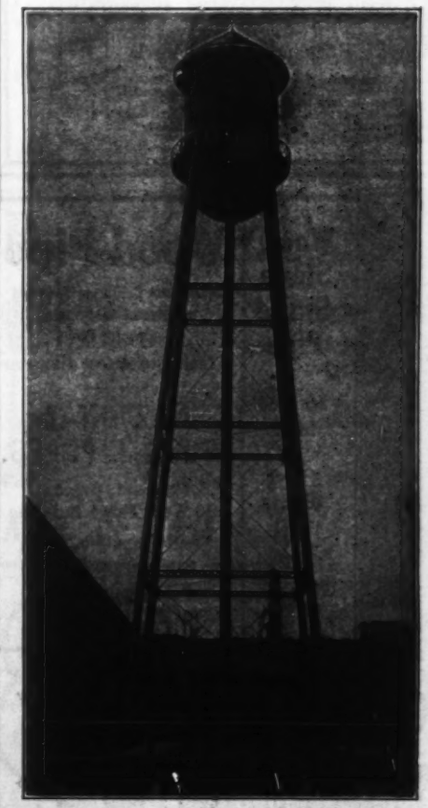

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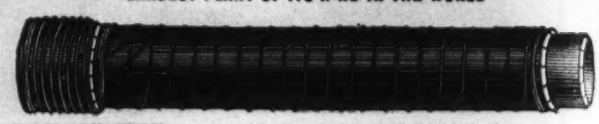

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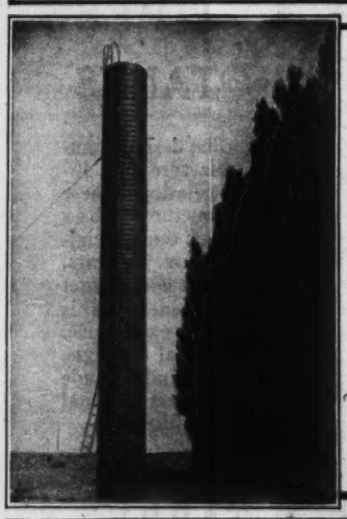

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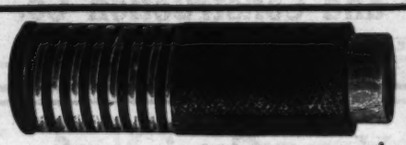

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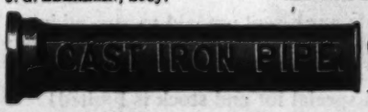

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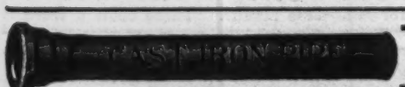

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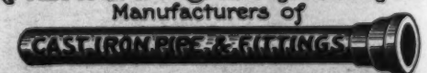

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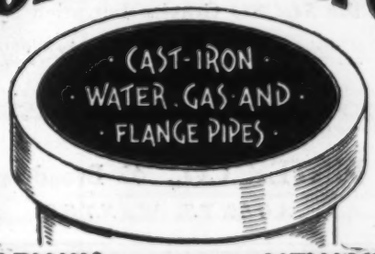

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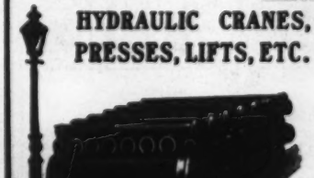

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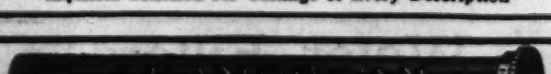

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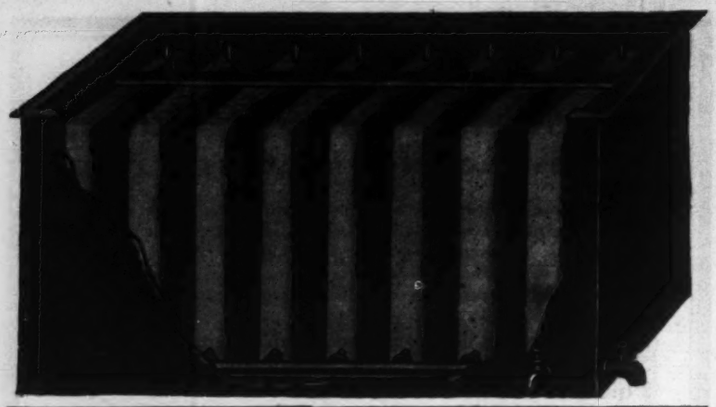

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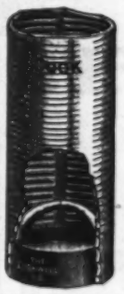

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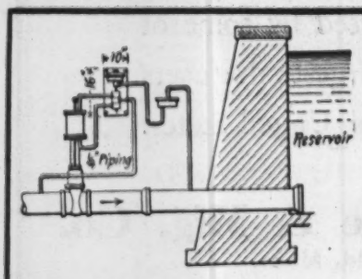

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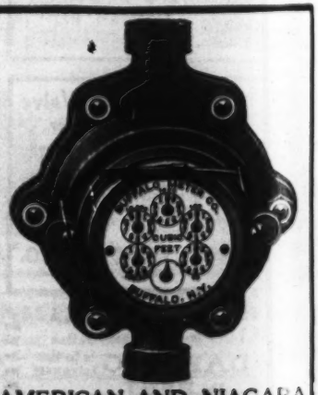

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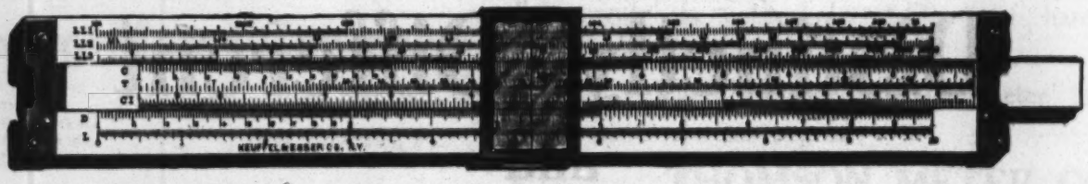

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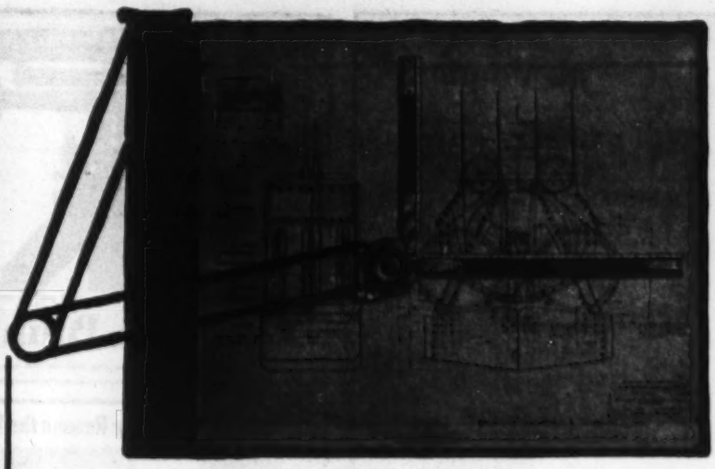

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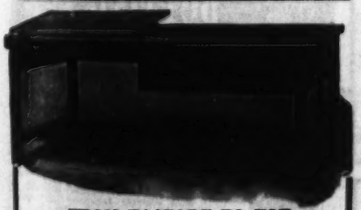

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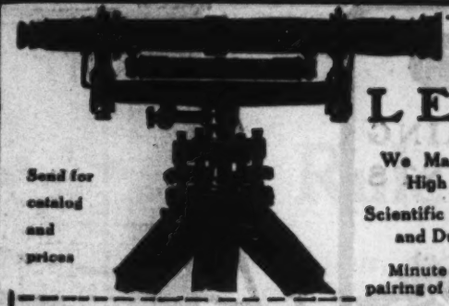

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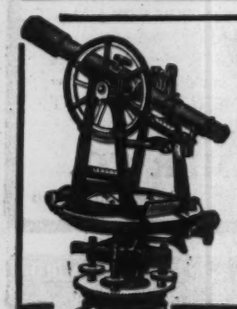

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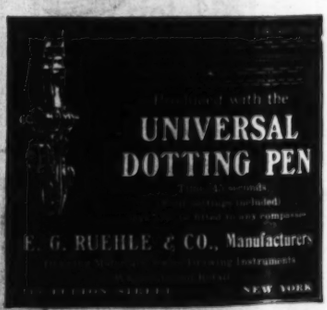

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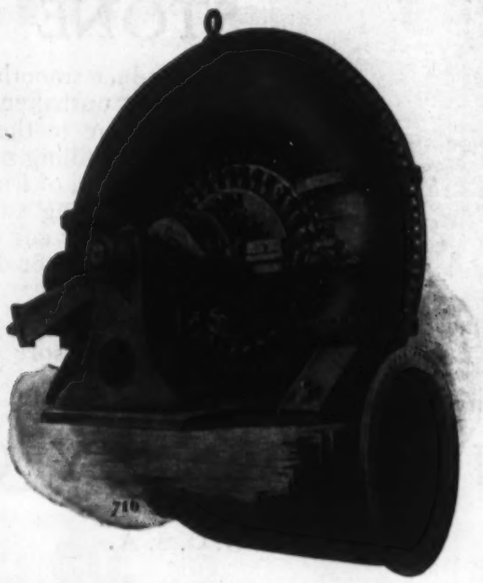

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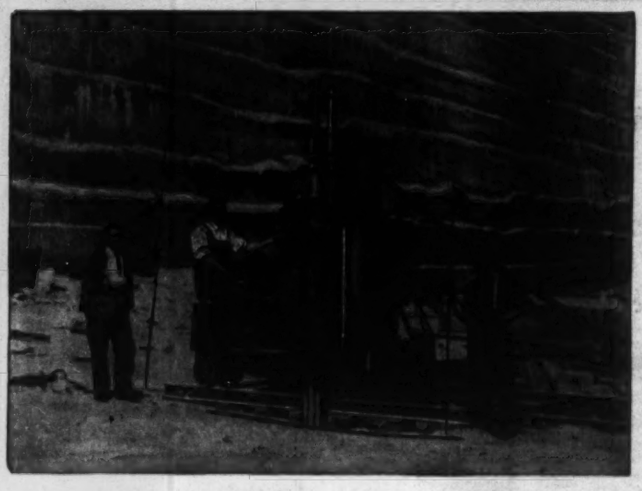

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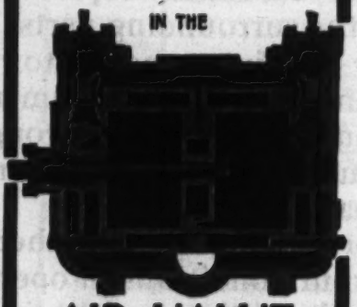

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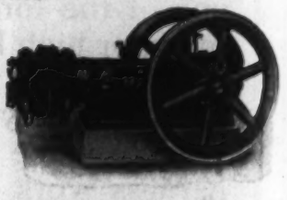

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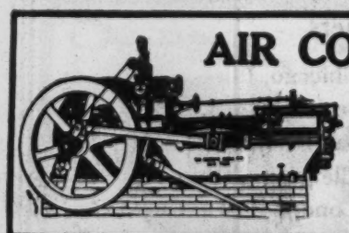

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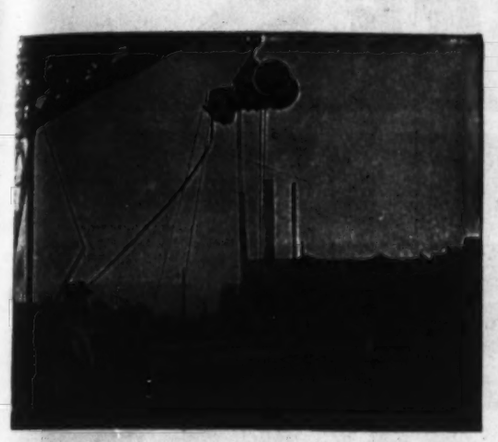

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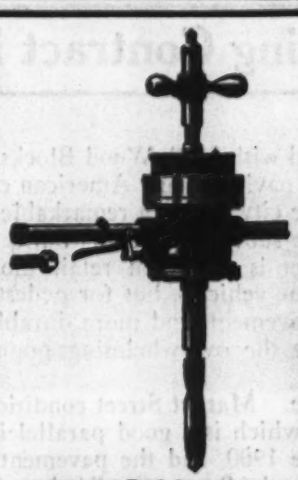

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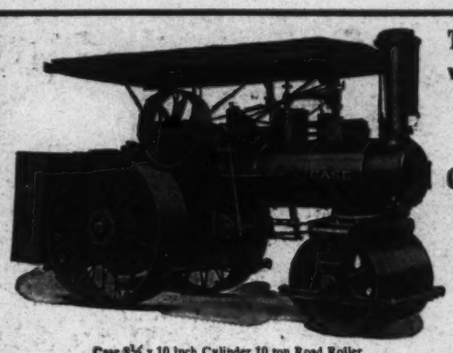

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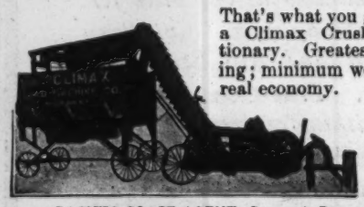

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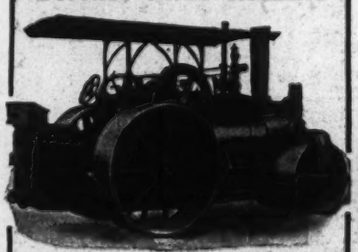

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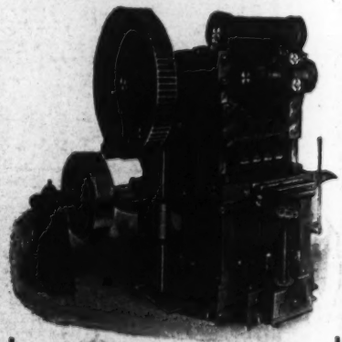

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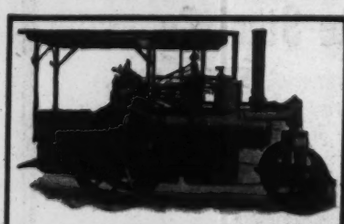

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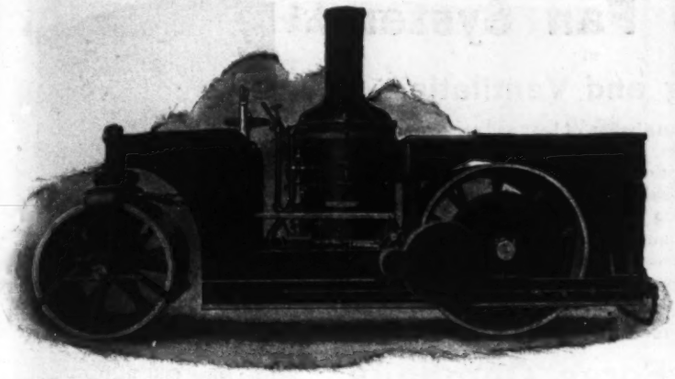

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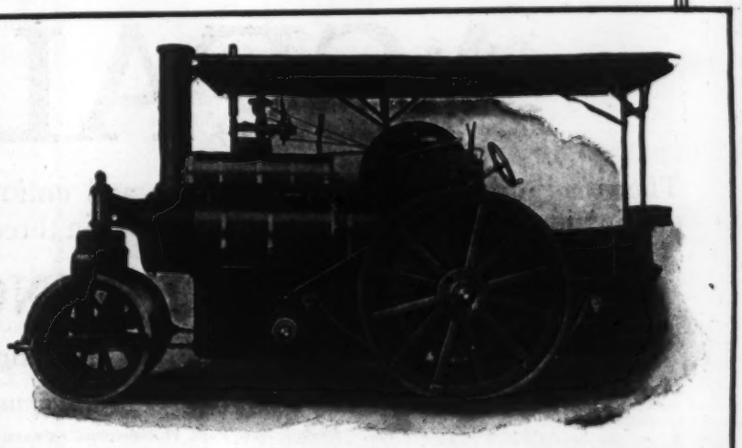

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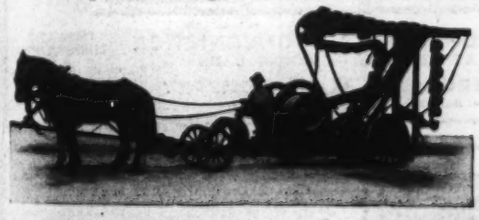

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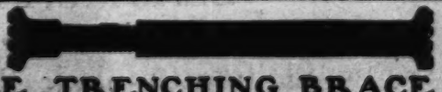
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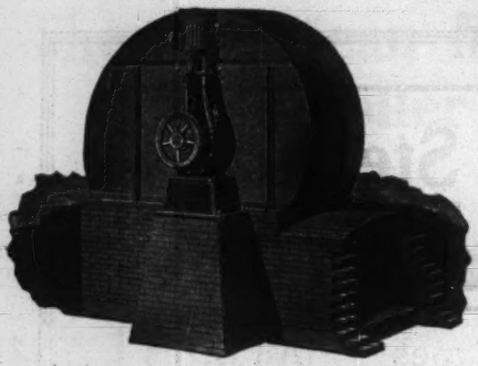

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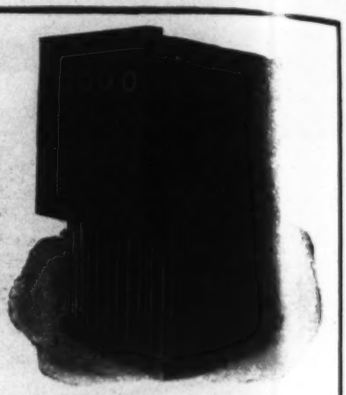

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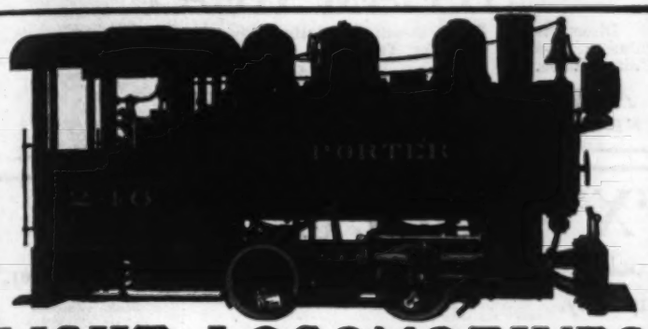

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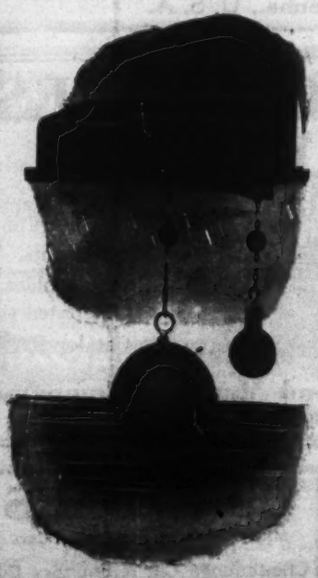

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Mechanical and Electrical Engineers.

ELECTRICAL ENGINEER, 15 years' experience in designing, estimating, construction and operating of electric power plants; light, motor, and storage battery installations, wants position, preferably in West or foreign countries; moderate expectations. Address "HOSPITALITY," 935 Vallejo St., San Francisco, Cal., 24-4t

TECHNICALLY TRAINED ENGINEER, familiar with design and operation of electrical, mechanical, power distributions, electric motor and lighting installations and plant maintenance and who has done some work in power plant and industrial building design, open for engagement, draughting room, office, construction, experience; salary, $1,800. Address "C. A. 24," Engineering News, New York. 24-12t

ENGINEER, graduate, age 29, Assoc. Am. Soc. M. E., Jun. Am. Soc. C. E., 7 years' experience electric power plants, waterworks, structural and concrete work; just completed designing, purchasing and constructing of large and difficult pumping installation in Arizona; open for engagement after January 1st, anywhere in U. S.; salary, $200. Address "S. 23," Engineering News, New York. 23-5t

TECHNICAL GRADUATE, mechanical, six years' experience, designing, estimating costs, inspecting, erecting, selling with engineers and manufacturers prefer position in New York with engineering organization or manufacturer. Address "F. A. 24," Engineering News, New York. 24-4t

POSITION WANTED by M. E. technical graduate, 6 years' experience. Address "W. A. 25," Engineering News, New York. 25-4t

MECHANICAL ENGINEER wishes change; at present employed by large engineering company; twelve years' experience design, estimates, specifications and construction of power plants; position in or near New York preferred. Address "W. A. 24," Engineering News, New York. 26-10t

MECHANICAL ENGINEER, five years' experience, mill construction, maintenance and superintendence, wishes to join general contracting company. "S. W. C.," 155½ Broadway, New York. 27-1t

COLLEGE MAN (25), 2 years' general experience, employed at present, desires to make permanent connection. Address "E. 27," Engineering News, New York. 27-1t

GRADUATE M. E.; American, over 20 years' broad practical experience in civil and mechanical engineering. Extensive experience in designing and supervising construction and complete equipment of up-to-date industrial plants, including factory buildings, steam and power plants. At present conducting own engineering office near New York City. Desires position as constructing or consulting engineer with active firm or corporation. In addition to submitting references of ordinary form, invites judgment of qualifications from inspection of drawings, specifications and works personally executed. Address "W. 27," Engineering News, New York. 27-1t

COMPETENT MECHANICAL ENGINEER desires position; 10 years' experience estimates, design, construction, operation steam and hydro-electric power plants, industrial works, structural and general construction; expert designer water turbines, turbine pumps. Address "O. 27," Engineering News, New York. 27-6t

MECHANICAL AND ELECTRICAL ENGINEER (28), graduate with diploma from the Swiss Polytechnical University; four years' experience, A1 calculator, designer and draftsman, wants position with chances of advancement; American and foreign references; speaks little English, but understands it thoroughly; location immaterial; moderate salary. Address "M. 27," Engineering News, New York. 27-2t

POSITION in New York City wanted by mechanical and electrical engineer with fifteen years' experience covering design, construction of machinery and buildings, shop, office systems, tests, reports, etc.; graduate Massachusetts Institute Technology, now employed. Address "F. A. 26," Engineering News, New York. 27-1t

Civil Engineers.

GRADUATE CIVIL ENGINEER, four years' experience in municipal work, surveying railway construction and reinforced concrete work. Address "H. 6," Engineering News, New York. 6-tf

WANTED—Permanent position or connection with firm or corporation having need of the services of a capable civil engineer of extended experience. Address "O. 22," Engineering News, New York. 22-tf

GRADUATE CIVIL ENGINEER, five years' experience on heavy railroad, lock canal, etc., work, desires position with contracting firm or construction work. Good draftsman. Will go anywhere. Report on short notice. Address "R. 19," Engineering News, New York. 23-8t

RAILROAD and construction engineer, 14 years' experience, tunnel, rock work, factory and mining plants, would like position on construction work; A1 references; instruments. Address "B. 24," Engineering News, New York. 24-5t

CIVIL ENGINEER desires change, technical training, seven years' experience railroad preliminary, location, construction water power investigations, etc.; a permanent position with prospects of advancement is more desired than high initial salary; excellent references. Address "A. 24," Engineering News, New York. 24-tf

SITUATION WANTED by young Civil Engineer (27); technical graduate; one year's experience as instrumentman on municipal, subdivision and river surveys; will consider engagement after Jan. 10, 1910, in any line of civil engineering work; salary consideration of less importance than permanency of position and opportunities for experience; present location, South. Address "J. 24," Engineering News, 1636 Monadnock Block, Chicago. 24-4t

ENGINEER, 38, single, eight years' experience on location and construction of railways and irrigation ditcher, desires position as resident engineer, transitman, levelman, topographer or draftsman; highest references. FLITMAN, Dos Palos, California. 25-10t

CIVIL ENGINEER (29), technical education, married, member several engineering societies, desires responsible or executive position with consulting engineer, water power development or corporation; six years' practical experience; a systematic office man, expert topographical draftsman; familiar with all classes of surveys and construction, concrete work, water supply, sewerage and municipal improvements; river improvement and bank protection. At present holding responsible position with large pulp manufacturing corporation. Address "F. 25," Engineering News, New York. 25-3t

GRADUATE CIVIL ENGINEER (30), capable of taking charge and pushing; nine years' practical experience; assistant engineer construction department large eastern railroad; resident engineer important work; thoroughly conversant, construction, field and office work; best references. Address "X. 24," Engineering News, New York. 25-tf

POSITION DESIRED by civil engineer (32); 8 years' experience on railroad work; 4 years resident engineer on heavy construction, involving two important viaducts of length exceeding 1,000 feet each and two tunnels, one nearly one mile long. One year on maintenance track work. References, including present employer. Address "Z. 26," Engineering News, New York. 26-3t

POSITION WANTED by engineer experienced in construction and reconstruction of electric and steam railways, land improvements, special track work, bridges and buildings, field and office. Address "I. A. 25," Engineering News, New York. 26-8t

UNIVERSITY GRADUATE, six months general engineering experience, desires position in or near Philadelphia. At present with bridge company. Address "B. 26," Engineering News, New York. 26-2t

POSITION WANTED by graduate C. E., Thayer School. Experienced transitman and engineer on water-works construction. At liberty after Jan. 1st. Present salary $115. Address "E. 26," Engineering News, New York. 26-3t

CIVIL ENGINEER wants position, water supply preferred. Large experience with developing water sheds and dam construction. Now free to go anywhere. Refers to completed works. Address "WATER," 104 Ann St., Hartford, Conn. 26-2t

GRADUATE civil engineer and architect; 5 years' college training; desires position as architect's or contractor's engineer; 12 years' experience with leading contracting engineers and architects, designing, estimating and superintending all kinds of building work, structural steel and reinforced concrete work and industrial plants. References. Address "M. A. 26," Engineering News, New York. 26-2t

CIVIL and hydraulic engineer, graduate, 20 years' experience in East, on heaviest hydraulic and general construction—8 years in charge, including very important water power experience, minimum salary, $4,000. Address "X. A. 26," Engineering News, New York. 26-6t

GRADUATE C. E. desires position in office; 16 years' experience, topography, mapping, hydraulic, power house, reinforced concrete, sewage disposal. Present salary, $150. Address "P. A. 26," Engineering News, New York. 26-3t

GRADUATE civil engineer, licensed surveyor, City of New York; four years' experience railroad location, construction, maintenance of way; one year municipal and building engineering; New York interview. Present work closing down. Can report at once. Address "O. B. 26," Engineering News, New York. 26-3t

TECHNICAL GRADUATE, 1907, two years in government survey in charge of party, desires change to construction work, preferably hydraulics or foundations; location of work no object. Address "P. 27," Engineering News, New York. 27-3t

CIVIL ENGINEER GRADUATE, three years' practical experience, building construction and railroad work; references; will consider other branches of engineering. Address "H. 27," Engineering News, New York. 27-4t

WANTED—Position by young man (27), 6 years' experience as instrumentman, assistant engineer and inspector on railroad, suburban development and waterworks construction. Good instrumentman and reliable inspector. Best of references. Address "S. 27," Engineering News, New York. 27-2t

GRADUATE of Princeton University, having specialized since graduation in concrete construction and hydraulic work, wishes to enter established firm with view to working up. Address "D. A. 26," Engineering News, New York. 27-2t

RECENT LEHIGH GRADUATE C. E., desires position where practical knowledge can be acquired; would consider position in any branch of civil engineering. Address "P. 24," Engineering News, New York. 27-1t

CIVIL ENGINEER, 26 years of age, college graduate, at present employed, would like position with Railroad in East or South; 6½ years' experience with leading trunk line on location, construction, maintenance, double-track work and bridge department. Best references. Salary, $110.00. Open Jan. 1st. Address "B. 25," Engineering News, New York. 27-1t

CIVIL ENGINEER, graduate, designer, estimator, detailer in steel, wood and masonry, 30 years' experience office and field, in bridges, buildings, power plants, mill buildings, foundations, wants responsible position with architect or contractor. Address "Z. A. 21," Engineering News, New York. 27-1t

CIVIL ENGINEER, graduate (27), three years' experience on municipal and highway work, surveying and power development. Address "W. A. 26," Engineering News, New York. 27-2t

GRADUATE C. E., American, 25, single, 3 years, experience in field on R. R. and building construction, open for engagement. Address "G. A. 27," Engineering News, New York. 27-2t

Bridge and Structural Engineers.

YOUNG ENGINEER, technical graduate, extensive experience, having had charge of work in designs, estimates and details of all classes of bridge and structural steel, reinforced concrete and building construction. Open for high-class position about Jan. 1st. References. Address "Q. 26," Engineering News, 1636 Monadnock Block, Chicago. 26-2t

STRUCTURAL AND HYDRAULIC ENGINEER, with over twenty years' experience in this country, recently lost one log, desires office work as designer, computer and draftsman on power development, metallic structural work, masonry and reinforced concrete. Worked in France, Germany, Italy, Argentina; may go abroad. P. O. BOX 214, Oakley, Cal. 22-8t

STRUCTURAL ENGINEER and draftsman, nine years' experience, buildings, railroad structures; desires position; moderate salary. Address "Z. 26," Engineering News, New York. 26-2t

STRUCTURAL ENGINEER wishes to change. Is technical graduate and has had 14 years' practical experience. Was chief draftsman for large structural iron works for 5 years. Has had experience in design of power plants, theaters, bridges, office buildings, etc. Address "O. A. 26," Engineering News, New York. 26-2t

ENGINEER seeks position, broad experience in design and erection of structural steel, reinforced concrete, mining milling, smelting plants and machinery. Technical graduate, age 29. Address "B. B. 26," Engineering News, New York. 26-3t

STRUCTURAL ENGINEER, estimator; graduate, 14 years' practical experience, now in charge large railway terminal; wants change. Address "B. A. 26," Engineering News, New York. 27-1t

STRUCTURAL ENGINEER (age 33), technical education, four years' shop and eight years' office experience. Detailing, designing and checking on Bridges, Mill and Office buildings. Past five years with leading fabricating company. Desires position preferably in charge of work for fabricating company. Address "K. B. 26," Engineering News, New York. 27-2t

OPEN FOR POSITION with general contracting or construction Co.; competent to take entire charge of structural and ornamental steel and iron work; estimating, subletting, superintendence. Address "B. A. 25," Engineering News, New York. 27-1t

Surveyors.

TRANSITMAN—Three years' training, four years' experience construction, stadia topography, property, steel tipples, concrete pipe line, mine work, etc., desires position. Location immaterial; can bring corps. Address "X. B. 4," Engineering News, New York. 4-tf

ENGINEER, 15 years on rivers, railroads, irrigation and municipal work, desires position; have complete outfit. Address "A. 17," Engineering News, New York. 17-tf

YOUNG SURVEYOR, 7 years' experience in field and office, go anywhere, can furnish references. Address P. O. BOX 43, Echo, N. Y. 23-12t

SEVEN YEARS' railroad, municipal work, chainman to Assist. Engr., inspector, highway construction, paving, specialty; transit outfit; any reasonable offer. Address "I. 25," Engineering News, New York. 25-12t

YOUNG MAN, age 21, two years' college training, two years field work, desires position with Engineering Corps. Can furnish excellent references. Address "I. 26," Engineering News, New York. 26-3t

INSTRUMENTMAN, of energy and ability, 4 years' experience railroad and city work, desires position; technical education and good draftsman. At present in charge of party. Address "F. 20," Engineering News, New York. 27-4t

WANTED—Position as Instrumentman or Transitman; six years' experience field work and on construction; location immaterial; best of references. Address "G. 27," Engineering News, New York. 27-9t

GRADUATE ENGINEER, 2 years as instrumentman on railroad surveys and construction, 4 years as designer and estimator for general contractor, wishes position on railroad construction. Address "Z. 27," Engineering News, New York. 27-1t

POSITION WANTED—Four years' experience in surveying and mapping; can furnish good references. Address JOHN D. CORNELIUS, 58 Grand Avenue, Freeport, L. I. 27-1t

INSTRUMENT and levelman, age 27, 7 years on level, river, railroad location, irrigation, city and country surveying, real estate development, desires position where ability and energy is wanted. Address "F. A. 27," Engineering News, New York.

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Draftsmen.

POSITION in structural drafting room by young engineer of ability wishing to learn. Salary and location immaterial. Address "S. 28," Engineering News, New York. 26-4t

STRUCTURAL DRAFTSMAN, long experience detailing, designing and checking; open for engagement. Address "B. A. 22," Engineering News, New York. 26-4t

ENGINEERING DRAFTSMAN, young C. E. graduate with field and office experience, quick and accurate at figures. Address "A. L. 26," Engineering News, New York. 26-2t

EFFICIENT bridge and structural draftsman now in the South, wants situation; can take full charge; able executive; good business abilities. Address "K. 23," Engineering News, New York. 26-2t

DRAFTSMAN JUNIOR, structural tracer; 3 years' experience; coal handling machinery preferred. Address "F. 17," Engineering News, New York. 27-1t

WANTED—By lady, position as draftsman in engineer's office; salary moderate; railway construction preferred. Address "H. A. 17," Engineering News, New York. 27-1t

DRAFTSMAN ENGINEER (25), college man, mechanical and structural; employed at present. Address "F. 27," Engineering News, New York. 27-1t

CHIEF DRAFTSMAN and structural engineer (35), at present in charge of engineering department for structural and ornamental iron shops, desires change to similar position or as engineer for architect. Address "K.A. 21," Engineering News, New York. 27-1t

DRAFTSMAN, university graduate, six years' experience in reinforced concrete, mill building and machine design, desires position. Address "L. 27," Engineering News, New York. 27-2t

YOUNG MAN with experience in surveying, also a fourth year student of Cooper Union, desires a position in or about New York at any branch of engineering (structural preferred) where practical knowledge could be acquired. Address "Z. B. 22," Engineering News, New York. 27-1t

TECHNICAL MAN wants position as draftsman, detailer or transitman; experienced. Address "H. 13," Engineering News, New York. 27-1t

GERMAN DRAFTSMAN, 27, 2 years' shop and foundry experience, 5 years' German College Karlsruhe and Muenchen, 3 years draftsman steam engine, steam turbine, crane and machine-tool work, desires position with moderate salary. Address "B. 27," Engineering News, New York. 27-1t

Superintendents, Misc., etc.

CONTRACTOR'S SUPERINTENDENT or Executive Engineer; Mem. Am. Soc. C. E., college education, civil and mechanical engineering, broad experience general contracting, very large propositions, railways, sewers, water-works, filtration plants, dredging, masonry, heavy excavation, massive and reinforced concrete, tunnels, cofferdam work. Accustomed handling large forces. New York interview. Any location. Address "D. A. 8," Engineering News, New York. 8-tf

YOUNG MAN, graduate in electrical and mining, desires position in erection or testing work with mining company or concern manufacturing mining equipment; some practical experience; good draftsman. Address "W. 12," Engineering News, New York. 12-tf

PAINTER AND LETTERER (34) wants position as foreman with locomotive machinery or bridge, etc., construction concern. United States or Canada. At liberty any time. Address "I. 19," Engineering News, New York. 19-12t

YOUNG MAN, two years' experience architectural draftsman, 2 years rodman, inspector and transitman, railroad bridge and dock construction; knowledge strength of materials; fourth year Cooper Union student, wishes position. Address "S. A. 19," Engineering News, New York. 19-12t

A TRAINED ARCHITECT with field and business experience would associate himself in an executive capacity with live building organization. Address C. S. J., 4 Clifford Place, Brooklyn, N. Y. 23-12t

CONTRACTING ENGINEER, who can show results, wishes to engage with company, vicinity New York or Phila. Now employed by firm specializing in reinforced concrete. Can get contracts at good prices. Address "H. 23," Engineering News, New York. 24-6t

ENGINEER and Superintendent (28), technical education, six years' experience in charge of field operations on heavy construction work, power plants, steel erection, rock excavation, massive and reinforced concrete. Position with contractor preferred; location east or central west. Address "B. A. 24," Engineering News, New York. 24-4t

YOUNG MAN with technical training desires any position; New York vicinity preferred. Address "R. 22," Engineering News, New York. 26-3t

CONSTRUCTION SUPERINTENDENT, technical graduate, 14 years' experience, would like position with contractor on railroad, tunnel, or heavy rock job. Good executive; references; any location. Address "C. 24," Engineering News, New York. 24-6t

CONTRACTORS' SUPERINTENDENT (34), graduate civil engineer, 11 years' experience, wishes position; best of references. Address "L. A. 26," Engineering News, New York. 26-2t

CONSTRUCTION SUPERINTENDENT and engineer, with extensive experience in building sewers, water-works, all kinds of concrete and reinforced concrete, location and grading for electric and steam railroads, driving long tunnels, accustomed to organizing quickly and handling large forces, and a keen executive, wishes to engage with a widely and reputably known contracting firm. Can be depended upon far from home office. Address "W. B. 26," Engineering News, New York. 26-3t

YOUNG MAN, 25, four years' experience on construction work and test borings, as inspector and foreman; five years' experience general clerical work, factory clerk, and etc., would like position construction or manufacturing company. Address "L. B. 26," Engineering News, New York. 26-4t

EXPERIENCED SUPERINTENDENT.—Has had charge of traffic, operation and maintenance of steam road and tramway. Prefers private company in Spanish speaking country. Address "I. B. 26," Engineering News, New York. 26-2t

TECHNICAL STUDENT wants position with civil engineer or contractor for experience; salary or location no object. Address "I. 27," Engineering News, New York. 27-1t

SWEDISH (25) I. C. S. student of C. E., with thorough theoretical learning in surveying, mapping, water-supply, sewers, filtration and drawings, would consider position where practical knowledge can be acquired in civil engineering; speaks English; salary no object. Address "A. 27," Engineering News, New York. 27-1t

TECHNICAL GRADUATE (29) desires position with contractor; experience, which covers a period of six years, includes the designing, estimating and detailing of structural steel; have also had good surveying experience. Address "K. 27," Engineering News, New York. 27-2t

GRADUATE ENGINEER, 4 years with general contractor as estimator and designer. Address "X. 27," Engineering News, New York. 27-1t

AS EASTERN REPRESENTATIVE for concern manufacturing full line of elevating, conveying and power transmission machinery, 10 years' experience, 6 years with present house. Address "R. 27," Engineering News, New York. 27-1t

SUPERINTENDENT, 20 years' experience heavy work, any climate, best efforts given; open for engagement Jan. 1. Address "E. A. 27," Engineering News, New York. 27-4t

CONTRACTOR'S superintendent or foreman, 8 years at heavy construction, tunnels, difficult foundations and reinforced concrete buildings. Best references. Address "D. A. 27," Engineering News, New York. 27-6t

FOR ENGAGEMENT on January first, young man experienced in estimating and contracting for structural and ornamental steel and iron work; full particulars if granted an interview. Address "A. A. 25," Engineering News, New York. 27-1t

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WANTED—Several draftsmen on steam shovel, dredge and small locomotive work. State experience and salary expected. Address AMER. LOCO. CO., Rogers Works, Paterson, N. J. 26-2t

WANTED—First-class structural draftsman who has had experience detailing and designing structural steel, mill and factory buildings. Position in middle West. State full particulars first letter; experience, salary, references, etc. Address "H. 26," Engineering News, New York. 26-1t

WANTED—General manager for structural and ornamental iron works company in the middle West. Must understand the business thoroughly and be capable of taking entire charge of entire business. State age, experience, references, and salary, and when could report. Address "W. 26," Engineering News, New York. 26-2t

EXPERIENCED ESTIMATOR for a general contracting company engaged in mill and reinforced concrete construction, both new and alterations. Must know prices, have some knowledge of drafting, be quick and accurate at figures, and have had some practical field experience. State age, experience and salary expected. Address "A. 26," Engineering News, New York. 26-tf

WANTED—Chicago District Manager for prominent house, selling contractors' equipment. Excellent opportunity for experienced salesman with executive ability. Address "T. A. 26," Engineering News, 1636 Monadnock Block, Chicago. 26-2t

WANTED—A draftsman familiar with the design of steel frame buildings. Give references, experience and salary expected. 913 Pennsylvania Building, Philadelphia, Pa. 26-2t

WANTED—Draftsman. One having experience in paper mill work preferred. State age, education, experience, if married or single, salary expected, and enclose copy of testimonials. Address "B. B. 26," Engineering News, New York. 26-3t

WANTED—Estimators on structural steel work for buildings, etc. Young or middle aged men and graduate engineers with experience in estimating and structural drafting preferred. Give full particulars regarding age, education, experience, salary expected, and names and addresses of references. Address "M. B. 26," Engineering News, New York. 26-2t

WANTED—Draftsman for steel construction and reinforced concrete, used to mill work. State age, education, experience, if married or single, salary expected, and enclose copy of testimonials. Address "A. B. 26," Engineering News, New York. 26-3t

WANTED—Assistant shop foreman, template makers, fitters, assemblers on structural steel work. Write KANSAS CITY STRUCTURAL STEEL COMPANY, Kansas City, Mo. 27-3t

WANTED—Building superintendent, capable of estimating all classes of buildings. State experience, send references and salary wanted. Address, CONTRACTOR, 428 Lowerline St., New Orleans, La. 27-1t

WANTED—A competent engineer, thoroughly familiar with the designing of structural steel work for buildings of all classes. No one without the above qualifications need apply. Give complete references. Address "C. 27," Engineering News, New York. 27-1t

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DRAFTSMEN, experienced in making economical shop details for structural steel for buildings. Apply to LEVERING AND GARRIGUES, 552 West 23d St., New York. 27-1t

OFFICE AND OUTSIDE WORK (little routine), for man of tact, trustworthiness and industry, under 28, with New York contractor (established 10 years) engaged in sub-surface work. Good breeding and some versatility necessary; technical graduate preferred. Address "K. A. 27," Engineering News, New York. 27-1t

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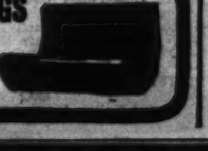

WANTED—Two first-class assistant electrical draftsmen at $4.00 per diem and one first-class marine engine and boiler draftsman at $5.04 per diem. A competitive examination will be held January 17, 1910, for the purpose of filling the above positions. For further information address "COMMANDANT," Navy Yard, Norfolk, Va. 27-2t

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ENGINEER desires work on inspection, computation and estimates. Address "B. 17," Engineering News, New York. 24-tf

DRAWING, tracing, engineering data, etc., handled in spare time; technical graduate, N. Y. vicinity. Address "S. 25," Engineering News, New York. 26-2t

WILL PAY $2.00 for 1 copy Engineering News of June 15, 1874, at that time called Engineer, Architect and Surveyor, and 25c. for March 7, 1885; and 10c. each for Jan. 3, 1907; Jan. 2, 1908; April 1, 1909, and $1.00 each for Cooper American R. R. Bridges. Cost of mailing allowed in addition. Address "A. R. T.," care of Engineering News, New York. 27-tf

WANTED work for ten good double teams in the vicinity of New York or Philadelphia. Address A. C. DENAHAN & CO., Yardley, Pa. 27-4t

EXPERIENCED DRAFTSMAN, technical graduate, desires work for spare time; reasonable charges. Address "D. A. 25," Engineering News, New York. 27-4t

TWO STRUCTURAL steel and reinforced concrete designers and detailers, New York City; desire work for spare time. Address "H. A. 27," Engineering News, New York. 27-1t

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Space under this head is sold at the uniform rate of $1.50 an inch; minimum charge, $1.50 a week.

Contractors' Material

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Steam Shovels, Cars, Rail, Locomotives, Dredges, Etc.

Write us before purchasing or renting. We rent with the privilege of purchasing, rental to apply on purchase.

HARPER MACHINERY COMPANY
Hudson Terminal, 50 Church St., New York.
Yards and Shops, Bloomfield, N. J.

Diamond Core or Prospecting Drills

Sullivan Size "S" Diamond Core Drill.
Sullivan Class "E" Diamond Core Prospecting Drill.
Sullivan Class "D" Diamond Core Drill and Equipment.
Sullivan Class "S" Diamond Core Prospecting Drill.
WE ALSO HAVE FOR SALE—HOISTING ENGINES, CONCRETE MIXERS, CRUSHERS, BOILERS, ENGINES, PUMPS, ETC.

WICKES BROTHERS
West and Cedar Streets. New York City

SPECIAL OFFER

1 Marion Style A 1¼-yd. Shovel.
1 Vulcan Locomotive, 9 x 14, 1905, 36".
12 4-yd. Diamond Frame Dump Cars, 36", one way.
WHOLE OUTFIT FOR $4,000.
THE NEW YORK PURCHASING AGENCY, INC.
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Telephone 4632 John.

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FOR SALE.

Before removal, Steel Building, 123' by 374'. For particulars write,

HENRY A. HITNER'S SONS CO.,
Philadelphia, Pa.

FOR SALE

One 7¼ in. x 10 National D. C. & D. D. with boiler and swinging gear, $725. One 8¼ x 10 Skeleton Lidgerwood, $350. One 7 x 10 in. Skeleton Mundy D. C. & S. D., $275. One 7¼ x 10 D. C. & D. D. Mundy with boiler, $600. One 6¼ x 8 D. C. & D. D. Lidgerwood with boiler, $550. A full line of Contractor's Machinery. One 22 x 42 Wright Corliss Engine, $1,200. One 16 x 36 H. & P. Corliss Engine, $800. One 16 x 30 Wright Corliss Engine, $600.
O. R. WHITNEY, 39 Cortlandt St., New York.

SPECIAL PRICES QUICK REMOVAL

40-HP. D. D. Engine, lift 9 tons single line.
6½ x 12 4-spool Erecting Engine with boiler.
10 x 10 3-drum clam-shell or scraper Hoist.
50-HP. Fire Box Portable Boiler.
20 x 30 Eng., with flywheel and pulley.
2-yd. clam-shell Bucket.
Portable Concrete Mixer, 75 yds. capacity.
CARLIN MACHINERY & SUPPLY CO., INC.
225 Sandusky St., N. S. Pittsburg, Pa.

Reinhardt's
TECHNIC OF MECHANICAL DRAFTING
Shows How to do it right Price, $1.00

FOR SALE or RENT

1—9x14-36 in. gauge Vulcan Locomotive.
1—9x14-36 in. gauge Porter Locomotive.
JAS. S. BRADEN
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BRIDGES 2nd HAND

But as good as new. 95 ft. and 153 ft. spans Pin connected Pratt truss. Weights and prices on application.
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Contractor's Plant

FOR SALE.

Locomotive Cranes, Derricks, Concrete Mixers, Electric Hoists and Car Hauls, Cableways, Locomotives, Steam Shovels, Hoisting Engines.
All necessary equipment for complete plant.
JOHN M. GREENE,
Drexel Building, Philadelphia, Pa.

Contractor's Plant For Sale or Rent

at phenomenally low prices and rates. Don't miss our advertisement on page 41, this issue.
UNITED STATES EQUIPMENT CO.,
1201 Fisher Bldg., Chicago, Ill.

FOR SALE.

Steam Road Rollers

With the intention of quitting the road-building business, I offer all of my steam rollers for immediate sale. Address "PARKER," care Engineering News, New York.

FOR SALE.
Or will rent
My complete equipment of

Three Steam Rollers

all in good condition. Address "BURNS," care Engineering News, New York.

FOR SALE
QUICK DELIVERY BARGAIN PRICES
FOUR BRAND NEW
BALDWIN LOCOMOTIVES
10 x 16, saddle tanks, 36 inch gauge, never used. Greatest bargain offered.
DALLETT & COMPANY,
611-612 Harrison Bldg., Philadelphia, Pa.

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70-ton Bucyrus shovel, 45-ton Bucyrus.
Vulcan Revolving and Little Giant traction shovels.
Relaying rails, 50-56-60 lbs. New rails.
Dump cars, both gauges, 1½ to 6 yards.
4 Vulcan dinkies, 9 x 14 and 10 x 14.
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FOR SALE CHEAP

Vulcan Little Giant Special, 3 sets of engines, good as new, little service, adjustable trucks, any gauge.
70 ton Bucyrus Steam Shovel, modern, up to date, air brakes, any inspection, like new, but little used, overhauled to high R.R. standard.
10x16 Porter, splendid shape, 36 in., any inspection.
150 tons 6 in. Relaying Girder Rail, with splices.
DALLETT & COMPANY
611 Harrison Building Philadelphia, Pa.

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FOR SALE.

1 10-TON VULCAN DINKEY with 32 3½-yd. cars one-way dump. This outfit is in good serviceable condition and will be sold at a bargain. Can be inspected at Pownal, Vermont.
A. B. C. EQUIPMENT CO.,
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Contractors' Outfits

consisting of everything used by General, Railroad, Electric, Concrete and Paving Contractors.
Give us your wants.
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26 Cortlandt St. 1508 1st Nat'l Bank Bldg.,
New York, N. Y. Cincinnati, O.

IMMEDIATE DELIVERY.
2—9 x 14 36" Gauge Locomotives.
2—300' Lidgerwood Cableways, 9 x 10 Engines.
2—1¼-yard Haiss Gravity Mixers.
1—¾-yard Haiss Gravity Mixer.
1—12" Direct Connected Centrifugal Pump.
1—6" No. 5 Emerson Pump.
PITTSBURG MACHINERY & EQUIPMENT CO.
805 Fulton Bldg., Pittsburg, Pa.

FOR SALE

We don't make a business of, we don't make money on

SECOND-HAND MIXERS

But we have at most times a number of used outfits, of our own and other makes, taken in trade for new machines. We put them in A1 condition and sell them for just what they "stand us in." You don't have to pay second-hand dealers' profits on these outfits—we make our money on new mixers. At present we have

FOOTE MIXERS:
1—No. 2 Steamer, practically new.
1—No. 2½, on trucks, no power.
1—No. 3 Steamer, first class shape.
2—No. 3 Steam Traction machines.
OTHER MAKES:
1—No. 4 Smith, on skids with eng. only.

If convenient, we prefer you to inspect them, but we will sell them "straight" and "sight unseen" under a definite guarantee as to their exact condition.

FOOTE CONCRETE MACHINERY CO., 184 La Salle St., Chicago

Steam Shovels FOR RENT Locomotives

We also sell them. Write for particulars
The Cincinnati Equipment Company,
Cincinnati, Ohio.
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FOR SALE.

Relaying Steel Rails

About 250 tons, 30 lbs. per yard,
About 300 tons, 48 lbs per yard,
About 300 tons, 50 lbs. per yard,
About 200 tons, 56 lbs. per yard,
About 200 tons, 58 lbs. per yard,
About 500 tons, 60 lbs. per yard,
New Light Steel Rails,
All Weights.
THE STEEL RAIL SUPPLY CO.,
No. 2 Rector St., N. Y. City.

SPECIAL
One 65-ton
BUCYRUS STEAM SHOVEL
thoroughly rebuilt and in absolutely first class condition; prompt shipment.
BIRMINGHAM RAIL & LOCOMOTIVE CO.
Birmingham, Ala.

PILING

STEEL—SECOND HAND
First class condition
ZELNICKER, IN ST. LOUIS
Rails and Equipment Dealers

FOR SALE BARGAIN PRICE
Two first class
Worthington Duplex Condenser Steam Pumps
Size 16 in. x 22 in. x 15 in., bronze piston pattern.
DALLETT & COMPANY
611 Harrison Bldg. Philadelphia, Pa.

FOR SALE.
28 TWO-WAY 5-YARD 36" GAUGE
Dump Cars
Ready for delivery January 10, 1910. First Class Second Hand Condition.
Location in Central New York State.
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1—5 ton Derrick with two stiff legs, 50 ft. mast.
3—5 ton Derricks with one stiff leg each, 50 ft. mast.
1—5 ton Guy Derrick, 50 ft. mast.
1—3 ton Guy Derrick, 65 ft. mast.
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Skid Excavators

Two Hayward skid excavators or land dredges. Just thoroughly overhauled in every detail,
One has 1⅛ yd. orange peel bucket, 60' structural steel boom, 12" x 12" engines; other 2 yd. bucket, 65' wooden trussed boom, 12¼" x 12¼" engines.
Inspection will show that these are what you want if you need equipment of this kind—and don't forget we have locomotives, shovels, cars and rails for immediate shipment.

H. H. WILSON & COMPANY
ARCADE BUILDING
PHILADELPHIA

Locomotives

165 Locomotives, narrow and standard gage, from 9 to 70 tons.
80 Forney type elevated engines, 25 tons.
Saddle Tank Locomotives, narrow and standard gage.
LARGEST STOCK LOCOMOTIVES IN UNITED STATES.
Southern Iron and Equipment Co.
ATLANTA, GEORGIA.

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12—One way, 1½ yard 36-in. gauge.
DUMP CARS
The owner offers this equipment at exceptionally low prices. Cars have never been used.
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50—Steel Plate Girders, 48" x 61', equally as good as new, blueprint on application.
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New and Relaying Rails

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We guarantee our rails as represented.
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☞We have for sale a number of good second-hand Locomotives.

FOR SALE.

1-yd. and 1¼-yd. Orange Peel Buckets.
60 Concrete Buckets, ½ to 2 yds.
1—1-yd. Hayward Class C Clamshell Bucket.
1—¾-yd. Browning Clam Shell Bucket.
1 No. 1 Vulcan Steam Hammer.
A 25 Hoist 10 to 100 Horsepower.
All our own stock, immediate shipment.
CONTRACTORS' MACHINERY & SUPPLY CO.,
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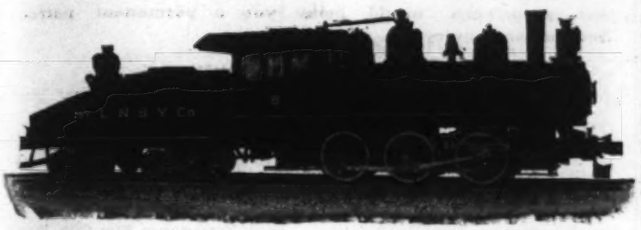
A NUMBER OF THOROUGHLY OVERHAULED



80 Ton Moguls

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51 Ton Moguls

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Railway and Contractor's Equipment

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Hoisting Engines.
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Complete Driving Outfits.
Direct-Connected Centrifugal Pumps.
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Air-Compressors and Pile Drivers

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FOR SALE

1—55 ton 2¼ yard Bucyrus Steam Shovel.
1—Improved A Marion Steam Shovel.
1—Giant D Boom Vulcan Shovel.
1—Model 20 Marion Shovel, almost new.
9—9 x 14 36" gauge Porter Saddle Tank Locomotive.
2—9 x 14 36" gauge Vulcan Saddle Tank Locomotive.
1—10 x 12 Lidgerwood Unloader.
1—Western Spreader Car, standard gauge.
1—No. 2 Ransome Concrete Mixer Mounted.
2—Svenson Continuous Mixers.
1—Russell Steam Road Roller.
150 ton 40 and 45-pound Relaying Rails.
75 ton 50-pound Relaying Rail.
40—4 yard 36" gauge One Way Dump Cars.
1—8¼ x 10 Single Special Drum Double Cylinder New Hoisting Engine.
Several new Carlin Engines, single and double drum, with and without boilers.
Large assortment of new Oregon fir timber up to 100 ft. lengths.
Complete line of derrick fittings.

Thomas Carlin's Sons Co.
1600 River Avenue, N. S., Pittsburg, Pa.

Fitz-Hugh Luther Co.

1648-1651 Monadnock Block, Chicago

REBUILT Cars, Locomotives, and Steam Shovels

New York Address, 140 Cedar Street
Works: Hammond, Ind., and Dover, N. J.

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STEAM SHOVELS AND OTHER PLANT TO LET

Address TROY PUBLIC WORKS COMPANY

B. W. SHERMAN, President — UTICA, N. Y.

Contractors you will lose money if you buy plant without getting our figures

When contractors' plant was a drug on the market we were in a positon to, and did, take advantage of a lot of extremely low offerings for all kinds of plant—locomotives—rail—dump cars—steam shovels—drills—compressors—Lidgerwood Unloaders—Boilers—Spreaders—Rock Crushers—Electric Plant—Graders—Wagons—Plows—Scrapers—Pumps—everything, in fact, that contractors use.

Now that work is opening up, we are ready to give you the advantage of our purchases.

All the plant we own has been or will be thoroughly overhauled in our own shops and it is located at various points East and West, giving our customers a big advantage in freights.

We can sell you plant at prices that will surprise you.

You absolutely **can not afford** to buy without getting our figures.

The selling of this surplus plant we have acquired does not interfere with our rental plan.

We will rent you any plant you want at rates you can afford to pay, and **you can pay** rental from your monthly estimates.

Tell us what you want today and get our figures either for rent or sale.

United States Equipment Co., 1201 Fisher Bldg., Chicago, Ill.

Bargains in Second Hand Equipment

Air Compressors

8 24 x 30 Rand straight line compressors, cap. about 1,325 ft. a minute, Nos. 2625, 2626, 2446, 2633, 2446, 10,170, 10.171, equal to new.
1 Hornsby oil engine 12 HP. geared to air compressor, mounted on portable truck, equal to new.

Cages

2 Platform cages with landing dogs 7' x 6½".
2 Platform cages, capacity 6,000 lbs., size 8' x 6'.
2 Pair landing dogs.

Cars

50 Oliver tunnel flat cars 1¾ cu. yds. 36" G special built up box 3½' high.
24 Oliver tunnel flat cars, 4½ x 5½, 25 same without box.
15 Special steel frames and trucks Kroppel 4' x 5'.
20 Allison 4 cu. yds. one way dump steel frames.
8 Ryan & McDonald 3 cu. yd. cars.
5 7 x 10 D. C. D. D. Lambert hoisting engine, boom swinger and upright boiler 80 x 90. (In New York City.)
1 Flat car 36" gauge, 3' 10" x 7' wide.
1 Flat car 36" gauge 6½' x 6' wide.
1 Flat car 36" gague 7' x 5' wide.
5 Flat cars 24" gauge, 2½' x 6'.

Drills and Parts

40 Sluggers No. 34 drills.
2 Jigger drills.
19 6' columns 5½".
2 8' columns 5½".
31 Tripods complete, No. 4.
11 Pistons with rotating nuts & checks.
60 Tripod weights.
75 Tripod legs.
37 Column jacks and screens.
7 Jap drills.
36 Pair column clamps.
29 Column seats.
3 Jigger tripods.
15 Tripod hook bolts.
26 Shells for slugger.
13 Hook bolts.
37 Lower valve chest yokes.
14 Cross heads.
1 Feed screw.
1 Ajax drill sharpener complete with 8 dollies.
4 No. 1 drills.
12 No. 2 drills.
45 No. 3. drills.
70 Tripods for No. 1 and 3 B.
168 weights for tripods, large.
21 Weights for tripods, small.

Engines and Hoisters

2 Single drum link motion Lambert shaft hoisting engines, size 12 x 12, Nos. 5608, 5609, 5610, 5611, good condition.
1 Single drum link motion Lambert shaft hoisting engine, size 10½ x 12, Nos. 5605, 5607.
7 7 x 10 D. C. D. D. Lambert hoisting with boom swinger without boiler.
1 12 x 16" swinger horizontal engine.
1 6 x 6" Olney & Warren engine.
1 2 x 10 Erie slide valve engine No. 2914.
1 8 x 10 high speed engine.
1 6 x 6 engine built by Jos. Beggs.
2 12 x 16" Chalmers engines, Allis-Chalmers make Nos. 5391 W and 17,428 H.
1 8 x 8" Panis high-speed engine.
1 Single drum Otis shaft hoisting engine with duplex engine No. 10,156.
1 Hornsby oil engine 4 HP. with pump attached, moved on skids, used to run 6 riveting hammers, equal to new.

Locomotives

1 Porter saddle tank, 10 x 16, gauge 36", height 10' 3", capacity 36,000 lbs., boiler pressure 150 lbs.
1 Vulcan Saddle tank, 9 x 14, 36" gauge
1 Vulcan Saddle tank, 9 x 14, 36" gauge
1 Vulcan Saddle tank, 9 x 14, 36" gauge
1 Vulcan Saddle tank, 9 x 14, 36" gauge
These locomotives have been used for about one year and are in excellent condition.

Concrete Mixers

3 No. 3 Ransome Concrete Mixers.
6 Gravity Mixers, 12' x 2'.
2 Haines Mixers (excellent condition, one new, the other in good condition).

Steam Shovels

2 Little Giant steam shovels, all standard gauge trucks.
1 Little Giant steam shovel.
1 Marion steam shovel, Model 20, 1¼ cu. yd.
2 1¼ cu. yd. dippers, for Marion.

The above is a partial list of our plant; all in good condition and located at our yards just outside of New York City.

We are headquarters for

Nims Concrete Mixers
Twentieth Century Graders and Snow Plows
Maney Four-Wheel Scrapers
Dodd's "Acme" Bottom Dump Concrete Buckets
"XXX" Wooden Buckets and Pails for general purposes
Stroudsburg Hoisting Engines
Petrolithic Road Machinery

Write for Our Catalogs and Prices

THE BARRON & COLE CO.

BARRON BUILDING 127 Franklin Street, NEW YORK

"CONFIDENCE"

The Keynote of Success

We are confident that we can save you money on machinery of all kinds, and we are satisfied that if given a chance to prove our assertions, would make you a permanent patron. Send us an inquiry.

MISCELLANEOUS MACHINERY

1—30" swing x 8' bed Putnam Screw Cutting Engine Lathe.
1—26" C. L. Rice Vertical Drill Press.
1—20" Barnes Vertical Drill Press.
1—Doty Mfg. Co. Power Driven Punch and Shear.
1—No. 3 National Bolt Cutter.
1—8" McNish & Butler Sticker.
1—24" J. M. & G. B. Farrar Wood Planer.
1—3 x 6 Wood Frame saw table.
2—30" x 4' Cast Iron Foundry Rollers.
1—Single-Head Horizontal Boring Machine wood Frame.
1—Wood Frame Dado Head Machine.

ENGINES

1—18 x 42 Allis Right-Hand Corliss Engine.
1—18 x 36 Wetherill Right-Hand Corliss Engine.
1—16 x 42 Allis Right-Hand Corliss Engine.
1—16 x 16 Erie Ball C. C. Automatic Engine
1—16 x 16 New York Safety C. C. Automatic Engine.
1—15½ x 16 Armington & Sims C. C. Automatic Engine.

BOILERS

2—80 Horse-power Erie City Economic Return Flue Boilers, 95 lbs. pressure.
2—48 x 14 Tubular Boilers, Butt Strap Triple Riveted, 120 lbs. pressure.
24—78 x 20 Tubular Boilers, 115 lbs. pressure.
15—72 x 20 Tubular Boilers, 100 lbs. pressure.
2—72 x 18 Tubular Boilers, 95 lbs. pressure.

Steel Storage Tanks, 4,500 to 6,000 gallons capacity. Used only short time in railroad service. Constructed of ¼-in. steel with 15/16-in. heads. Fitted with domes and 15-inch manhole. Subject to rigid inspection, and painted before shipment.

Largest and most complete line of Structural Steel and Iron in the world. We cut to any size, punch, rivet and fabricate as far as practical and deliver all ready to assemble at a saving to you of from 30 to 60%. Let us make you an estimate on the work you have in view.

Send for our new 500 Page Catalog No. 258 of immense value to purchasing agents in any line of business. Send to-day. It will cost you nothing.

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36 ton 15" x 24" four wheel saddle tank locomotive rebuilt with new boiler.

Do you want a locomotive to give service equal to new? Then this is it. 44" driving wheel centers, 7' wheel base, Westinghouse air brakes.

Shall we send details?

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ARCADE BUILDING
PHILADELPHIA

Bargains in Machinery for Quick Buyers

Corliss Engines, 12" to 30" cylinders.
Automatic and Slide Valve Engines, all sizes.
Lathes, Planers, Drills, Shapers, Slotters.
Wood Working Machinery.
Punches, Shears, Bending Rolls.
Hoisting Engines, Pumps, Boilers.
Locomotive Cranes, Crushers, Crushing Rolls.

L. F. SEYFERT'S SONS, INC.
434-441 N. 3d St., Philadelphia.

FOR SALE OR RENT.

12—10 x 16 Porter, 36" S. T. Locomotives.
4—10 x 16 Baldwin 36" S. T. Locomotives.
30— 7 x 10 D. C. D. D. boom swing hoisting engines, with and without boilers.
5—Lidgerwood 6¼ x 8 D. C. D. D. boom swing engines without boilers.
8—Lambert, 30, 40 and 60-HP. electric hoists with boom swing.
5—Lambert 7½ x 10 D. C. D. D. mounted cableway hoisting engines.
30—Cameron Steam Pumps, all sizes.
20—50,000 Capacity S. G. Flat Cars.
2—26-ton Little Giant Special Traction Shovels.

HENRY A. HITNER'S SONS CO.,
Philadelphia, Pa.

FOR SALE.

1—No. 0 Thew Revolving Steam Shovel.
8—Three-yard One-Way Dump Cars.
8 tons 20-lb. Rail.

All in good condition.

J. N. BASTRESS & CO., Union Trust Bldg.,
25-3t Harrisburg, Pa.

FOR SALE.

1 Model 20 Marion Shovel, No. 1881.
2 Browning Locomotive Cranes, Capacity 5 Tons at 35 feet radius, 10 ft. gage.

Can be inspected at Lockport, N. Y. Possession given Feb. 1st, 1910.

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FOR SALE OR RENT
or to rent Second Hand

Macadam and Asphalt Rollers

in first-class condition.

Address "NAED," c/o Engineering News, New York.

FOR SALE.

A Stone Crushing Plant

in running order, comprising
One No. 7½ McCully Crusher.
One No. 5 McCully Crusher.
With Engine and Boiler, etc., Complete.
Apply to
NAUGHTON COMPANY & ARTHUR McMULLEN,
161 Third St., Long Island City, New York.
27-1t

FOR SALE.

Must Sell at once for $20

(All new.)

One Spring Balance 50 ft. K. & E. No. 7600.
One N. Y. Leveling Rod complete K. & E. No. 6270.
One Hand Level K. & E. No. 5701.
Two 18 oz. Plumb Bobs K. & E. No. 6483-1.
Address "D. 27," Engineering News, New York. 27-1t

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"FOR SALE"

Advertisements

See Construction News page 234.

(Last reading page.)

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Is Made Easy By Using The

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Rates: $1.50 per inch per insertion

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BARGAINS

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MARIONS

1 Model 91 (105 tons), with 1⅛, 2⅛ or 5-yd. dipper.
2 Model 60, nearly new.
3 Model G, thoroughly overhauled.
2 Imp. A, 45 ton, thoroughly overhauled.
2 Model 20, nearly new.

BUCYRUS

1 85 ton, overhauled.
1 70 ton, overhauled.
2 65 ton, overhauled.
1 45 ton, overhauled.
1 45 ton, good order.

VULCANS

2 70 ton, 2½ yd. dippers.
1 45 ton, 1¾ yd. dipper.
2 Little Giant Special Traction.
1 Little Giant Special Trucks.

OHIO

1 80 ton Traction, extra long dipper arms, Western delivery.

ATLANTIC

1 70 ton, 2½ yd. dipper.

LOCOMOTIVES

4 ft. 8 1-2 in. Gage

3 18×24, 10 wheelers, 45-55 tons, new fireboxes; overhauling completed.
1 20×24 Consolidation, new firebox, ready for delivery.
1 45 ton saddle tank, 6 wheel, new firebox, new tank.
3 eight wheelers, good order.

36 in. Gage

10 9×14 Porter dinkeys. 1 10×16 Dickson dinkey.
2 10×16 Davenport dinkeys 2 11×16 Baldwin, eight wheelers.
4 10×16 Porter dinkeys.

CARS—MISCELLANEOUS

24 6 yd. std. gage Western dump cars.
20 60,000 lbs. cap. std. gage flats, 36' long.
40 50,000 lbs. cap. std. gage flats, 34' long.
2 48 ft. std. gage flats.
5 60,000 lbs. cap. std. gage gondolas.
24 3 yd. K. & J. 36" gage dump cars.
60 4 yd. Western 36" gage dump cars.
50 1¼ yd. Western 24" gage dump cars.
1 5 yd. Bucyrus dipper.
1 5 yd. Marion dipper.
2 2½ yd. Marion dippers.
1 1½ yd. Marion dipper (rock).
1 ⅝ yd. Marion dipper.

Also rock crushers, land dredges, wrecking cranes, passenger coaches, and a large number of miscellaneous locomotives, steam shovels, cars, etc., etc.

SEND US A LIST OF YOUR WANTS. WHAT HAVE YOU FOR SALE?

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CHICAGO OFFICE:
1301-3 Great Northern Bldg.

26-2t

Inspector's Handbook of Reinforced Concrete

BY

WALTER F. BALLINGER and **EMILE G. PERROT**

Assoc. Am. Inst. of Architects, M. Am. Soc. C. E. — Assoc. Am. Inst. of Architects, Assoc. M. Am. Soc. C. E.

WITH the strides made in the past few years in the reinforced concrete building construction, the demand for inspectors or clerks of the works having experience in this construction has been far greater than the supply. Those architects or engineers who have specialized in this construction have had applications from inspectors continually who wish to avail themselves of contact with this work under the direction of specialists. This small volume has been published with the hope that it would fill a place in the literature on reinforced concrete not covered by any other book. The authors' experience and personal contact with the inspectors and their viewpoint of various details of the work shows the necessity of such a book of instruction.

For the sake of simplicity in treating the subject of reinforced concrete, it is divided into three general divisions, each division embracing a study of one of the main elements that enter into the construction of reinforced concrete. These are, first, the "Forms or Falsework"; second, the "Reinforcement"; and, third, the "Concrete." The chapters follow in the order named, as it is the intention to follow throughout the book the process of construction of the actual work as nearly as can be. In addition, an appendix has been added, embracing formulas and tables to be used in calculating the strength of reinforced concrete.

CONTENTS

FORMS OR FALSEWORK—Box-shaped Forms—Knock-down Forms—Props or Shores—Steel Beam Girders—Column Forms—Cleaning—Wall Forms—Wall Bearings—Pipe Holes, Sleeves, etc.—Removal of Forms.

REINFORCEMENT—Systems and Bars—Loose Bars—Unit Systems—Plain Bars—Deformed Bars—Cables—Placing Reinforcement—Welding of Bars—Function of the Various Parts of the Reinforcement—Stirrups—Sockets, etc.

CONCRETE—Cement—Sand—Stone and Gravel—Proportions and Mixing—Per Cent of Voids—Hand Mixing—Batch Machine Mixing—Continuous Mixer—Handling and Depositing Concrete—Warm Weather—Cold Weather—Stopping Day's Work—Protecting Finished Work—Waterproofing Concrete—Concrete Walls—Hollow Walls—Joints in Wall—Finishing Concrete—Coated Surface—Plastered Surface—Scrubbed and Tooled Surfaces—Sand Molded Work—Cage Construction—Cement Stairs—Roof Surfaces—Top Coating of Floors—Filling between Sleepers—General Conclusions.

APPENDIX—Rectangular Beams—Formulae for Strength of Rectangular Beams—T-Beams—Rectangular Columns—Tables—Formulae.

INDEX.

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CAST-IRON WATER PIPE.

Parkersburg, W. Va., Dec. 17, 1909.

Sealed bids or proposals for the construction and laying of cast-iron water pipes for additional water supply system of the City of Parkersburg, and endorsed, "Proposals for Laying of Cast Iron Water Pipes, Contract No. 2," will be received at the office of the Auditor of the City of Parkersburg, W. Va., until 8:00 p. m., Thursday, January 6, 1910, and will then be opened and publicly read by the Board of Affairs of said city.

All bids shall be made upon the blank forms approved by the Board of Affairs of Parkersburg, W. Va.

Each proposal shall be accompanied by a certified check for Six Hundred ($600.00) Dollars, drawn to the order of the "City of Parkersburg."

Copies of specifications can be obtained at the office of the City Auditor by intending bidders.

Included in the items are the following approximate quantities:

Laying of 8,750 ft. of 12" cast iron water pipe.

Laying of 18,600 ft. of 10" cast iron water pipe.

Laying of 5,800 ft. of 8" cast iron water pipe.

Laying of 4,000 ft. of 6" cast iron water pipe.

Including the setting of hydrants and valves and lifting of 30,000 ft. of 4" and 6" cast iron water pipe, to be replaced by larger sizes as named above. All cast iron water pipes, hydrants and specials to be furnished by the City of Parkersburg, W. Va., delivered at city storage.

By order of the Board of Affairs of the City of Parkersburg, W. Va.

J. S. DUNN, JR.,
President.

Attest:
FRANK GOOD,
Auditor.

HYDRANTS, STOP VALVES AND EXTENSION VALVE BOXES.

Parkersburg, W. Va., Dec. 17, 1909.

Sealed bids or proposals for the furnishing of hydrants, stop valves, and extension valve boxes for additional water supply system of the City of Parkersburg, and endorsed, "Proposals for Furnishing of Hydrants, Stop Valves and Extension Valve Boxes, Contract No. 3," will be received at the office of the Auditor of the City of Parkersburg, W. Va., until 8.00 P. M., Thursday, January 6th, 1910, and will then be opened and publicly read by the Board of Affairs of said City.

All bids shall be made upon the blank forms approved by the Board of Affairs of Parkersburg, W. Va.

Each proposal shall be accompanied by a certified check for Five Hundred ($500.00) Dollars, drawn to the order of the "City of Parkersburg."

Copies of specifications can be obtained at the office of the City Auditor by intending bidders.

Included in the items are the following approximate quantities:

20 hydrants.

210 stop valves of various sizes.

210 extension valve boxes.

All to be delivered free on board cars, Parkersburg, W. Va.

By order of the Board of Affairs of the City of Parkersburg, W. Va.

J. S. DUNN, JR.,
President.

Attest:
FRANK GOOD,
Auditor.

STEEL SUPERSTRUCTURE.

Winnipeg, Man.

Sealed tenders addressed to the Chairman, Board of Control, will be received at the office of the undersigned up to 11 a. m., Tuesday, January 18th, 1910, for removing the present superstructure and furnishing and erecting new superstructure and floor complete for Louise Bridge across the Red River. Plans, specifications, and forms of tender, together with conditions governing tenders, as prescribed by by-law, may be obtained at the office of the City Engineer, Winnipeg. The lowest or any tender not necessarily accepted.

M. PETERSON,
Secretary.

Board of Control Office,
Winnipeg, Canada, Dec. 20, 1909.

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POWER STATION AND FILTER EXTENSIONS.

Wilmington, N. C.

Sealed proposals will be received for material and labor in connection with the above work by the Water and Sewerage Commission of Wilmington, N. C., until twelve (12) o'clock noon, of Wednesday, January 12th, 1910, when they will be opened and publicly read.

The improvements contemplated consist of the construction complete of a brick power and filter house, the construction of machinery foundations, rearrangement of machinery, the building of a radial brick stack, extensions to the filter plant, the building of a reinforced concrete sedimentation basin, and a concrete storage reservoir.

Specifications and plans will be ready for distribution on or before January 2d, 1910. A complete set of prints may be procured by prospective bidders by addressing direct the Southern Map Co., Southern Building, Wilmington, N. C., at a net cost of five dollars ($5.00) delivered.

Each proposal must be accompanied by a certified check in the sum of five (5) per cent. of the amount bid as evidence of good faith upon the part of the bidder.

The Commission reserves the right to reject any and all bids, or waiving formalities, to accept any which may seem to it to be to the best interest of the City of Wilmington.

WATER AND SEWERAGE COMMISSION,
Charles W. Worth, Chairman,
Wilmington, N. C.
HAZLEHURST AND ANDERSON,
Consulting Engineers
Atlanta, Ga. Wilmington, N. C.

WATER PIPE AND FITTINGS.

Aberdeen, Wash.

Sealed proposals will be received by the undersigned City Clerk of the City of Aberdeen, Wash., up to 5:00 o'clock P. M. Wednesday, January the 5th, 1910, for the following f. o. b. Aberdeen, Wash.:

250 length of Class C 10-inch diameter cast-iron pipe.

12 lengths of Class C 6-inch diameter cast-iron pipe.

2 10-inch cast Tees.

1 10-inch by 6-inch cast Tee.

6 10-inch by 6-inch cast Tees.

3 10-inch non-rising stem hub end Gate Valves.

6 6-inch non-rising stem hub end and Gate Valves.

6 6-inch Ells hub and spigot ends.

200 lbs. first quality oakum.

5,000 lbs. pig lead.

Said supplies to be paid for by warrants drawn on the Water Fund of said City. The Council reserves the right to reject any part of or all bids.

Dated at Aberdeen, Wash., December 11, 1909.

P. T. CLARK,
City Clerk.

A postal will bring details DATA on **SHOVELS**

THE WYOMING SHOVEL WORKS, Wyoming, Pa.

PAVING.

Elk City, Oklahoma.

Proposals will be received until 8 o'clock Monday night, January 10th, 1910, and opened at the Council Chamber in the City Hall Building, at a regular meeting; for twenty blocks of vitrified block paving, including grading, storm sewer, curbing, guttering, etc.

Plans and specifications can be seen at the office of the City Clerk in Elk City, Oklahoma, or at the office of the Engineer at No. 842 Wilson Building, Dallas, Texas.

Plans and specifications will be sent to any responsible paving contractor upon the receipt of a certified check made payable to the City Clerk in the amount of Five ($5.00) Dollars; said check to be returned if the Contractor makes a bid in the regular prescribed form on the date above named.

Each proposal must be made on the regular form that will be provided by the City Clerk and must be accompanied by a certified check in the amount of One Thousand ($1,000.00) Dollars made payable to the Mayor of Elk City, said check to be forfeited to the City of Elk City if the bidder fails to enter into contract and give bond as prescribed in the proposal and specifications.

The right is reserved to reject any and all bids.

H. O. HIXON, Mayor.
R. J. CARLILE, City Clerk.
F. H. LANCASHIRE, Engineer.

Attest:
R. J. CARLILE, City Clerk.

ARTESIAN WELL DEVELOPMENT.

Jackson, Miss.

Sealed bids will be received by the Water Commission of Jackson, Miss., until 3 p. m., January 23d, 1910, for boring the necessary artesian wells and furnishing machinery for pumping same to provide a supply of not less than four million gallons per day of 24 hours for the use of City Water Works. Bond must be given to guarantee results. General specifications can be had on application to

HAMILTON JOHNSON,
General Manager, Jackson Water Works,
Jackson, Miss.

PROPOSALS FOR STEEL DRY DOCK.—Mississippi River Commission, Third District, Vicksburg, Miss., Nov. 20, 1909. Sealed proposals for the construction and delivery of a steel floating dry dock will be received at this office until noon, Jan. 5, 1910, and then publicly opened. Information furnished on application. CLARKE S. SMITH, Capt., Engrs.

IRRIGATION WORK.

DEPARTMENT OF THE INTERIOR.
OFFICE OF PORTO RICO IRRIGATION SERVICE.

Guayama, Porto Rico, Sept. 28, 1909.

Sealed proposals will be received at this office until 2 o'clock P. M., January 17, 1910, for the construction of an earth and gravel dam, to be known as the Patillas Dam and Appurtenant Structures, near the town of Patillas, Porto Rico, requiring the excavation of about 726,000 cubic meters of earth, rock and gravel, and the placing of about 2,900 cubic meters of concrete. The estimated cost is about $500,000. Plans and specifications may be obtained from this office; or from the Commissioner of the Interior, San Juan, Porto Rico; or from the U. S. Reclamation Service, Washington, D. C. A deposit of $2.00 is required for the plans, which deposit will be refunded on the return of plans prior to the date set for opening the bids. The right is reserved to reject any and all bids.

B. M. HALL,
Chief Engineer,
Porto Rico Irrigation Service.

By order of
L. H. GRAHAME,
Commissioner of the
Interior of Porto Rico.

Plans and specifications for this work are on file at the office of Engineering News, New York.

Further advertisement will be issued at a later date for proposals, to be opened at the same time and place as above, on the construction of about 6,000 feet of rock tunneling in connection with this project.

Opportunities will be afforded, at future dates, of bidding on the construction of additional dams and canals, estimated to cost about $1,200,000.

RESURFACING ROADS.

Jacksonville, Fla.

Sealed bids will be received by the Board of County Commissioners at their office in the Court House, Jacksonville, Fla., until 9.30 A. M., January 5th, 1910, for resurfacing approximately twenty-five (25) miles of County Roads in Duval County, Florida. All bidders to furnish specifications for material, and samples of same, with which they proposed to resurface said roads. Thickness of resurfacing material to average not less than three (3) inches in the cross-section. Bids to be for a fixed price per sq. yd. for finished surface. The contractor to furnish all material and labor necessary to properly perform the work. The roads to be resurfaced were constructed of macadam, shell and gravel. A certified check for ($500.00) five hundred dollars, and made payable to F. J. Hyde, Chairman Board County Commissioners, Duval County, must accompany each bid, and said check to be retained by the Board until the completion of the work and the party awarded the contract will also be required to give a bond, satisfactory to the Board of County Commissioners, guaranteeing the work for three years. Said bond to be accepted by the Board of County Commissioners before the commencement of the work. Bid envelopes to be addressed to F. J. Hyde, Chairman Board County Commissioners, and to be marked "Bids for resurfacing roads." The work to commence within thirty days after the letting of the contract and to be completed within twelve months thereafter. Payments to be 85% of monthly estimates. Any further information desired will be furnished upon application to Gail L. Barnard, County Engineer, Room 9. Court House, Jacksonville, Fla. The Board reserves the right to reject any or all bids.

GAIL L. BARNARD,
County Engineer.

THERE WILL BE A PUBLIC HEARing by New York Harbor Line Board in Army Building, 39 Whitehall St., New York, 11 a. m., Jan. 5, 1910, on application of Riparian Commission of New Jersey for harbor lines on Shrewsbury River between Seabright Bridge and pier at Normandie Station on N. J. & Southern R. R., and about noon of same date on application of E. C. Brown & Sons for extension of harbor lines in front of their property at Tottenville, N. Y. Interested parties are invited to attend. WM. T. ROSSELL, Col. Engrs., Senior Member.

For other PROPOSAL ADVERTISEMENTS See pages 51, 52, 54, 55, 56, and Construction News, page 234.

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THE ENGINEERING NEWS BOOK DEPARTMENT — 220 Broadway, NEW YORK

LIGHT AND WATER PLANT.

Macon, Mississippi.

Sealed bids are invited by the City of Macon, Miss., and will be received at the office of the Board of Mayor and Aldermen until 7 P. M., Jan. 17th, 1910, for furnishing machinery and supplies only in connection with the improvement of the City Light and Water Plant in accordance with specifications to be had at the office of the Board of Mayor & Aldermen, there being $20,000.00 cash on hand for this purpose.

ITEMS.

Bids will be asked on the following items: Compound high-speed engine, two 2,300 v. 3 phase generators and exciters, three 2,300 v. 3 phase vertical motors, one three panel switchboard and instruments, series street lights, three vertical turbine pumps, feed water pump, closed feed-water heater, ejector condenser and check valve, vacuum release and back pressure valve, vacuum oil separator and trap, steam separators and traps smoke stack pipe, valves and fittings, pipe covering, and miscellaneous supplies.

The right to reject any and all bids is reserved, and a certified check is required equal to five per centum on all bids amounting to over $200.00.

General instructions to bidders, blank form for proposals, specifications and contract form, and all necessary information may be had by addressing,

G. B. BASKERVILLE, JR.,
Engineer,
Macon, Mississippi.

SEWAGE TANKS AND VALVES.

Toronto, Can.

Sealed tenders endorsed "Tender for Sewage Tanks" or "Tender for Valves," etc., as the case may be, will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, Canada, until noon on February 15th, 1910, for the following work and materials:

Contract 3. Laying Sewer Outlet.
Contract 4. Building Sewage Tanks.
Contract 5. Supply of Iron Castings.
Contract 6. Supply of Structural Steel.
Contract 7. Sludge Valves, Penstocks and Pedestals.
Contract 8. Supply of Cast Iron Pipe.
Contract 9. Supply of Cranes.
Contract 10. Supply of Special Tile.

Plans may be seen and specifications obtained at the Office of the City Engineer, Toronto.

The usual conditions relating to tenders as prescribed by City By-Law must be strictly complied with or the tender will not be entertained.

The lowest or any tender not necessarily accepted.

JOSEPH OLIVER (Mayor),
Chairman, Board of Control.
City Hall, Toronto, December 14th, 1909.

BRIDGE.

Norwalk, Ohio.

Sealed proposals will be received by the Board of County Commissioners of Huron County, Ohio, at their office in the Court House, at Norwalk, Ohio, until 10.30 A. M., Standard time, Monday, the 24th day of January, 1910, for the furnishing and erecting of a steel riveted truss bridge over Huron River at Monroeville, Ohio, known as Main Street Bridge. Length of bridge, 204 feet, consisting of two spans each 62 feet and one span 80 feet. Width of roadway, 20 feet, with sidewalk on one side 4 feet in width.

Plans and specifications may be seen at the office of Surveyor of Huron County.

Bidders may submit alternate plans which shall conform to the general specifications on file.

Bidders will be required to deposit certified checks payable to Jay E. Smith, Auditor of Huron County, in the amount of $300.00 with bid.

Right is reserved to reject any and all bids.

By order of Huron County Commissioners.

JAY E. SMITH,
County Auditor.
Norwalk, Ohio, December 20, 1909.

U. S. ENGINEER OFFICE, Room 710, Army Building, New York, N. Y., Dec. 27, 1909.—Sealed proposals for repairing and extending jetties and constructing dike at Mattituck Harbor, N. Y., will be received at this office until 12 M., Jan. 27, 1910, and then publicly opened. Information on application. W. M. BLACK, Col., Engineers, U. S. Army.

CONSTRUCTION AND EQUIPMENT.

POINT DU BOIS HYDRO-ELECTRIC DEVELOPMENT.

City of Winnipeg, Man.

Sealed tenders on prescribed forms addressed to the Chairman of the Board of Control, Winnipeg, Canada, and marked on the envelope "Point du Bois Hydro-Electric Development, tender for ...." (here add the particular item or items as below), will be received at the office of the undersigned up to 11 A. M. of Tuesday, February 15th, 1910, for the supply and erection of the various portions of the equipment for the Terminal Station at Winnipeg and for the Turbine Governors and Gate Valves for the Generating Station.

Copies of the Instructions to Bidders, plans, specifications and forms of tender, may be obtained at the Power Engineers' Office, Carnegie Library Building, Winnipeg.

These specifications and plans, etc., may also be seen at the offices of Messrs. Smith, Kerry & Chace, Confederation Life Building, Toronto.

Each tender must be accompanied by a certified cheque payable to the order of the City Treasurer for the sum called for in the corresponding "Instructions to Bidders," which cheque will become forfeit to the Corporation in the event of the successful tenderer refusing or neglecting to sign a satisfactory contract when called upon to do so.

Individual tenders will be received for

18. Terminal Station.
19 & 20 Step-Down Transformers and Terminal Station Switching and Accessory Apparatus.
21. Terminal Station, Light, Heat and Power Systems.
22. Terminal Station, Oil and Water Systems.
24. Testing Transformers and Apparatus.
26. Turbine Governors (seven).
27A. Two five-foot Gate Valves.

The Board reserves the right to reject any or all tenders, or to accept any tender which shall appear advantageous to the City of Winnipeg.

M. PETERSON,
Secretary.
Board of Control, Winnipeg, December 21st, 1909.

LEVEE WORK.

Greenville, Miss.

Sealed proposals will be received at the office of The Board of Mississippi Levee Commissioners, Greenville, Miss., up to 12 M., Monday, January 10, 1910, for the construction of about 230,000 cubic yards of embankment in the Mississippi Levee District.

Maps, profiles and specifications may be seen and other information that bidders may desire can be obtained at the office of the Chief Engineer.

No bids will be considered unless accompanied by a forfeit of three per cent. and if accepted, good and sufficient security will be required for the proper execution of the work. The right is reserved to accept or reject any or all of the proposals or any part thereof.

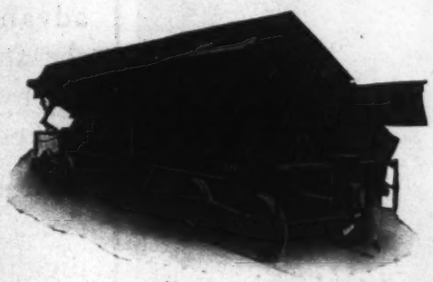
C. H. WEST,
Chief Engineer.
Greenville, Miss., December 21, 1909.

DEPARTMENT OF THE INTERIOR, Washington, D. C., December 24, 1909.—Sealed proposals, in duplicate, will be received at the Department until 2 o'clock P. M., Wednesday, February 16, 1910, for the construction of a sanitary sewer system for the North Addition to the City of Lawton, Oklahoma, in accordance with drawings and specifications, copies of which, with form of proposal, may be had on application at the Department. A certified check for the sum of $5.00 will be required as a guaranty for the safe return of the plans loaned. The plans and specifications may also be examined in the office of the Mayor of Lawton, Oklahoma, and of John D. Kennard, Civil Engineer, Lawton, Oklahoma. The right is reserved to reject any or all bids, waive technical defects, accept one part and reject the other, as the interests of the Government may require. Proposals must be securely enveloped, marked "Proposal for Construction of Sanitary Sewer, Lawton, Oklahoma," and be addressed to the Secretary of the Interior, Washington, D. C. FRANK PIERCE, First Assistant Secretary.

For other PROPOSAL ADVERTISEMENTS See pages 51, 52, 54, 55, 56, and Construction News, page 234.

FOUND AT LAST!

A Car that will Unfailingly Dump by Air



NO LEVERS CHAINS SHEAVES SHAFTS

CAPACITY: 20 CUBIC YARDS

NO COMPLICATED SET OF VALVES TO WORRY OVER

By means of one simple valve this car successfully operates itself by direct connection in train line! By one movement of the valve handle *this* car can be brought from one dumped position to the opposite dumped position. It will handle itself empty on 20 pounds of air.

The Oliver Air Dump Car

Is so simple in construction that it is foolproof; any common day laborer can manipulate it.

Manufactured by

The Wm. J. Oliver Mfg. Co., Knoxville, Tenn.

SELLING AGENTS: R. E. Oliver, N. Y. Life Building, Chicago; Henry J. McCoy Company, 67 Dey Street, New York, N. Y. The Cincinnati Equipment Co., Pennsylvania Building, Philadelphia, Pa

---

Go to G. M. GEST, 277 Broadway, New York, for your underground conduit systems. He is an expert.

"K&J" "K&J"

"K&J"

CONTINUOUS SERVICE CARS

FOR

QUARRIES, CEMENT— PLANTS, MINES, ETC.

JUST AS YOU SAY—

"K & J" Cars are designed and built to fit your work, after a "K & J" Haulage Expert has made an on-the-ground study of your conditions; or they're built exactly to specifications furnished by you.

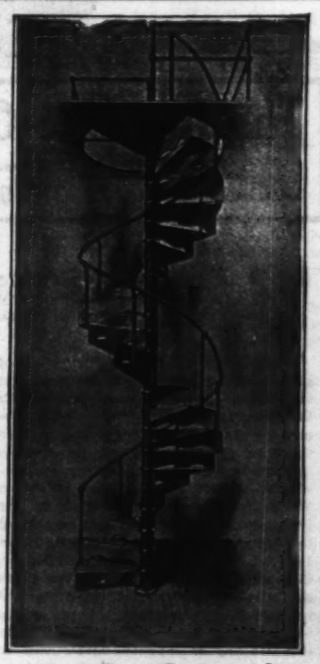
¶ They're always built at a moderate price.

See Catalog 60-G

The Kilbourne & Jacobs Mfg. Co.

COLUMBUS, OHIO

254



Cast Iron Sectional

SPIRAL STAIRS

40" to 72" diameter

Shipped all ready to set up

We also make

Portable Hydraulic Presses

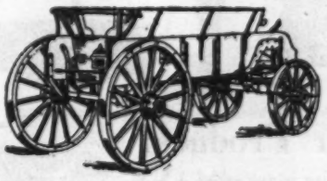
for all purposes

Raquette Foundry & Supply Co.

Massena, N. Y., U. S. A.

The Bright Promises

of something "as good as the Watson for less money" all turn out alike.



Did you ever see an imitation of anything that was as good as the original? Of course not.

Then why expect it in dumping wagons?

Don't forget that the Watson was the FIRST bottom dumping wagon and that it is still first in sales.

WATSON WAGON COMPANY

Canastota, New York

BRANCH OFFICES:

256 Broadway, NEW YORK CITY — 604 Witherspoon Bldg., PHILADELPHIA, PA.

806 Renshaw Bldg., PITTSBURG, PA. — 970 Old Colony Bldg., CHICAGO, ILL.

Repeat Orders Count

A large Eastern Contractor, after using two Acme Center Dump Buckets, placed a repeat order with us for twenty more. Another large contractor wired for five after trying one. We have never had a bucket returned for any reason.

Deuel's Acme Center Dump Bucket

ACME EQUIPMENT & ENGINEERING CO.

6824 Union Avenue, Cleveland, Ohio, U. S. A.

POOLE ENGINEERING & MACHINE CO

ENGINEERS FOUNDERS AND MACHINISTS

BALTIMORE, MD.

MANUFACTURERS AND DESIGNERS OF ALL KINDS OF

HEAVY MACHINERY

REQUIRING FIRST CLASS WORKMANSHIP AND MATERIAL

BAND, ROPE AND FLY WHEELS — FRICTION CLUTCHES — SHAFTING — PULLEYS AND HANGERS

MACHINE MOLDED AND PLANED GEARING

MACHINERY — WHITE LEAD — FERTILIZER WORKS

GRAIN ELEVATORS — FLOUR MILLS — BRASS, COPPER

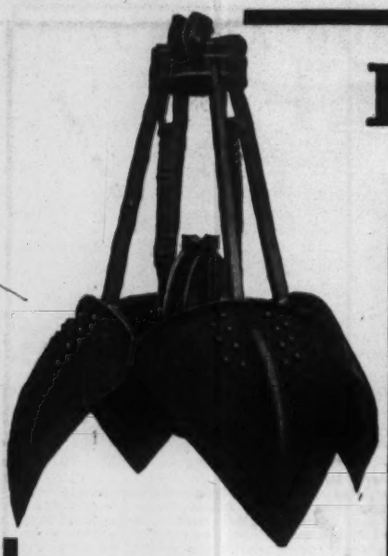
IRON PLATE ROLLING MILLS — CABLE — MARINE RAILWAY

POOLE & ELTEL TURBINE WATER WHEELS

DREDGING MACHINES

EXPANSION & TOGGLE BOLTS For fastening all kinds of material to stone and brickwork. Send for Catalogues.

Steward & Romaine Mfg. Co., 130 N. 6th St., Phila., Pa.

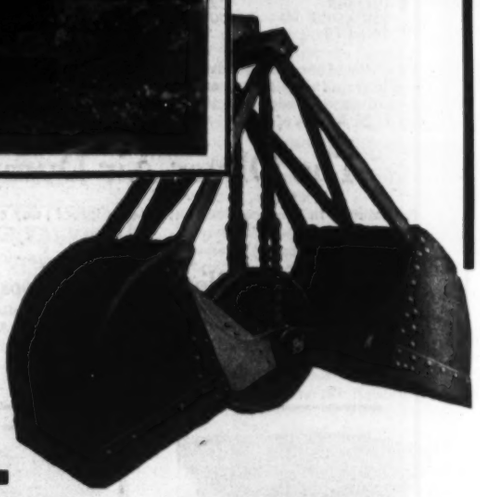


Hayward Buckets

Always in advance of the standard set by other makes.

Supreme in the field of digging machinery.

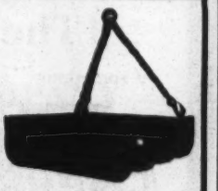
ORANGE PEEL AND CLAM SHELL



Send for a copy of our new catalogues Nos. 35 and 36

THE HAYWARD COMPANY

50 Church Street, New York



Stuebner Products

have been on the market MANY YEARS, and are in USE EVERYWHERE. They have risen in reputation as time has proved their SUPERIOR advantages. They stand high in the estimation of Contractors and others—because they meet the need of hard service.

THE LINE INCLUDES:

The "Stuebner" Patent "Excelsior," Central Dump Two Line, Controllable Bottom Dumping, Class "A" and "B" Turnover, And Side and Back Lever Catch Coal Buckets, Side, End and Bottom Dumping Cars, Wheelbarrows and Hand Dump Carts, Asphalt Heaters, Lead Melting Furnaces, etc.

Send for Catalogue

G. L. Stuebner, Iron Works

Foot of 11th St., Long Island City, New York, N. Y.

The Faivrette Clam Shell Bucket

Built of Steel in all Sizes. The Best Digger on Earth

See our large Ad every month **THE G. H. WILLIAMS CO., Cleveland, O.**

SEWERS.

OFFICE OF THE BOARD OF PUBLIC WORKS OF THE CITY AND COUNTY OF DENVER, COLORADO, DEC. 13, 1909.

Sealed proposals for the furnishing of all materials, supplies, labor, etc., and to sustain all the expense incurred in the construction of district sewers, submains and their appurtenances in and for the West and South Side Sanitary Sewer District in the city and county of Denver, as ordered by the Board of Public Works in a resolution adopted on the 18th day of August, 1909, and authorized by Ordinance No. 111 of the series of 1909, of the city and county of Denver, Colorado, in accordance with the plans and specifications adopted and prescribed by said board, will be received at the office of the Board until 11 A. M. on the 14th day of January, A. D. 1910, at which hour the bids will be publicly opened and read aloud.

To insure good faith on the part of the bidder, a certified or cashier's check in the sum of $30,000.00 on some approved national bank or trust company in the city of Denver must accompany each bid, payable to the treasurer of the city and county of Denver, and to be forfeited to the city and county of Denver as liquidated damages in case the bid shall be accepted and the bidder shall fail for ten days after notice of such acceptance, given personally or by mail to his address, to enter into the contract awarded him.

Printed copies of statement of the work, specifications, blank forms for proposals, contract, bond, etc., may be obtained at the office of the Board of Public Works, on and after the date of this notice and until the opening of bids. Upon the opening of bids the Board will proceed, without unnecessary delay, to canvass the same and certify the results to the Mayor with its recommendations.

As it is estimated by the Board that the approved bid will approximate the sum of $600,000.00, the successful bidder will be required to furnish a bond of $400,000.00 executed by some surety company, to be approved by this board and the Mayor.

The right is reserved to reject all bids and thereupon to advertise for further bids, or otherwise, as to the board may seem best.

THE BOARD OF PUBLIC WORKS,
By W. B. LOWRY, President.

FORT MONROE, VA., December 6, 1909.—Sealed proposals, in triplicate, will be received until 10.00 A. M., January 10, 1910, for the construction, including plumbing, heating, electric wiring and fixtures, of an Engineer's Storehouse at Fort Monroe, Va. Plans and specifications may be seen in the Office of the Chief Quartermaster, Department of the East, Governor's Island, New York. Deposit of certified check for $25.00 required as guaranty return plans and specifications. Bidders on proposals must state name of manufacturers supplying them material. Information on application. The United States reserves the right to accept or reject any or all proposals or any part thereof. ERNEST E. TILTON, Capt. and Q. M., U. S. A., Constg. Q. M.

For other PROPOSAL ADVERTISEMENTS See pages 51, 52, 54, 55, 56, and Construction News, page 234.

FOR 30 YEARS our machines have been used upon sewer work. Write us. CARSON TRENCH MACHINE CO., Boston.

THE PARSONS TRACTION TRENCH EXCAVATOR

Machine No. 50, working at Milwaukee, Wisconsin, September 1, 1909, cutting trench for 36 inch water pipe, depositing excavated material, one-half into wagons on one side and balance beside the trench on the other side.

Since this time thirteen additional machines of this kind have been sold.

THE PARSONS EXCAVATOR

will cut trenches of any width between 28 and 78 inches and any depth to 20 feet.

It is adapted to every condition confronted in the excavation of trenches by machinery. It will do the maximum amount of work at a minimum expense for operation and repairs.

We Sell—Do Not Lease

Sold Exclusively by

GEO. L. LAMBERT

SALES MANAGER **208 Observatory Bldg., DES MOINES, IOWA**

Manufactured by THE G. L. PARSONS COMPANY, Newton, Iowa

TUNNELS.

DEPARTMENT OF THE INTERIOR.
OFFICE OF PORTO RICO IRRIGATION SERVICE.

Guayama, Porto Rico, Nov. 4, 1909.

Sealed proposals will be received at this office until 2 o'clock P. M., January 17, 1910, for the construction of the Carite Tunnel near Guayama, and the Toro Negro Tunnel near Villalba. The aggregate length of said tunnels being about 6,000 linear feet and the estimated cost being about $100,000. Plans and specifications may be obtained from this office; or from the Commissioner of the Interior, San Juan, Porto Rico; or from the U. S. Reclamation Service, Washington, D. C. The right is reserved to reject any and all bids. A deposit of $1.00 is required for the plans, and will be refunded on their return before January 18, 1910.

B. M. HALL,
Chief Engineer,
Porto Rico Irrigation Service.
By order of L. H. GRAHAME,
Commissioner of the Interior of Porto Rico

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., December 18, 1909.—Sealed proposals will be received at this office until 3 o'clock P. M. on the 25th day of January, 1910, and then opened, for the extension, remodeling, etc. (including plumbing, gas piping, heating apparatus, electric conduits and wiring), of the U. S. Post Office at Pawtucket, Rhode Island, in accordance with the drawings and specification, copies of which may be had from the Custodian at Pawtucket, R. I., or at this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., December 16, 1909.—Sealed proposals will be received at this office until 3 o'clock P. M. on the 10th day of February, 1910, and then opened, for the extension, etc., except elevator (including plumbing, gas piping, heating apparatus, electric conduits and wiring and standard clock system), of the United States Post Office and Court House at Lynchburg, Virginia, in accordance with the drawings and specification, copies of which may be obtained from the Custodian, or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

SEWERS.

SEWERAGE DEPARTMENT,
Charleston, S. C., Dec. 11, 1909.

Sealed proposals will be received by the undersigned until 12 M., Tuesday, January 11, 1910, for Pipe Sewers and Appurtenances as follows:

Contract "A"—Approximately 3 miles of Pipe Sewers (18-inch to 8-inch diameter,) with appurtenances and such 6-inch house connections as ordered.

Contract "B"—Approximately 8½ miles of Pipe Sewers (18-inch to 8-inch diameter), with appurtenances and such 6-inch house connections as ordered.

For information address the undersigned. Right is reserved to reject any or all bids.

J. H. DINGLE,
City Engineer.

DRAINAGE SYSTEM.

Grandfalls, Texas.

Sealed proposals will be received by the Drainage Commissioners at their office in Grandfalls, Texas, until 2 o'clock P. M., January 22d, 1910; for the construction of about twenty miles of drain ditches.

Specifications and profiles on application.

The Drainage Commissioners reserve the right to reject any and all bids.

J. B. SMITH, Pres.,
H. V. CARR, Sec'y,
C. D. ISAAKS,
Drainage Commissioners.
A. H. DUNLAP, Engr.

For other
PROPOSAL ADVERTISEMENTS
See pages 51, 52, 54, 55, 56, and Construction News, page 234.

OUR TRENCH MACHINES have been used by 600 contractors upon sewer work. *Catalog.* CARSON TRENCH MACHINE CO., Boston.

THE DUTY OF THE BUCKET

The buckets of a trench excavator have the following duties to perform:—**To loosen** the material to be excavated; **to scoop up** and carry the loosened material; **to discharge** this material completely and cleanly on to the spoil bank. A trench excavator bucket which is deficient in any one or more of these qualities is to that extent limited in its serviceableness. **No trench excavating machine except the CHICAGO SEWER EXCAVATOR has buckets possessing more than one of them.**

The Chicago Sewer Excavator bucket has rooter plow points to loosen the soil; it has a sheet steel scraper bucket to scoop up and carry away the loosened soil, and it has a positive cleaning device insuring a clean and complete discharge of the soil; finally, all these features are combined in one strong, compact device as easy to maintain and replace as the simplest scoop bucket. This explains why the Chicago Sewer Excavator will dig hard or sticky soil which no other trench excavator can dig successfully.

We Sell Outright or Lease on a pay-for-work-done Lease. **Catalogue No. 102.**

Municipal Engineering & Contracting Co.

RAILWAY EXCHANGE, CHICAGO, ILL.

Agents wanted in unoccupied territory.

THE RANSOM HOLLOW DAM

BUILT OF REINFORCED CONCRETE

We have recently made arrangements whereby we finance good Hydro-Electric properties.
If you have one, we will look same over, and reply at once. No long waiting.

THE HYDRAULIC PROPERTIES COMPANY, 60 Broadway, New York

Ambursen Hydraulic Construction Co.

HYDRO-ELECTRIC AND IRRIGATION DEVELOPMENTS

176 Federal Street, Boston — New York Office: 165 Broadway

HIGH-GRADE FIRE BRICK

A good article is worth its price—Our No. 1 are No. 1
Recollections of quality remain long after matter of price is forgotten.

HENRY MAURER & SON, 422 East 23d St., New York

CATSKILL AQUEDUCT.

CONTRACT 68.

Sealed bids will be received by the Board of Water Supply, in Room 910, 299 Broadway, New York, until 11 A. M., on January 18, 1910, for Contract 68 for the construction of seven steel pipe siphons consisting of riveted steel shells 9 feet 9 inches and 11 feet 3 inches nominal inside diameter, enveloped with concrete and lined with Portland cement mortar, aggregating 2.6 miles; also several stretches of aqueduct in open cut and on embankment or cut-and-cover aqueduct, aggregating about 250 feet. The work is located in the Towns of Yorktown, Mt. Pleasant and Greenburg, and the City of Yonkers, Westchester County, New York.

At the above time and place the bids will be publicly opened and read. Pamphlets containing information for bidders, and pamphlets of contract drawings can be obtained at Room 906 at the above address by depositing the sum of Ten Dollars ($10) for each pamphlet. For further particulars see Information for Bidders.

JOHN A. BENSEL,
President;
CHARLES N. CHADWICK,
CHARLES A. SHAW,
Commissioners of the Board of Water Supply.
J. WALDO SMITH,
Chief Engineer.
THOMAS HASSETT,
Secretary.

OFFICE CONSTRUCTING QUARTERMASTER, Fort Sill, Okla., Dec. 14, 1909.—Sealed proposals, in triplicate, subject to the usual conditions, will be received at this office until 10 o'clock a. m., Jan. 15, 1910, and then publicly opened for the construction, plumbing and wiring of the following buildings: 1 guardhouse; 1 quartermaster's workshop; 1 quartermaster's storehouse; 1 stable guard and shop building. Plans, specifications, blank proposals and further information furnished on application. Certified check for $5 required as deposit, check to be returned upon return of plans and specifications to this office. U. S. reserves the right to accept or reject any or all bids or any part thereof. Proposals to be marked "Proposals for Public Buildings," and addressed to CAPT. DAVID L. STONE, Constructing Quartermaster, Fort Sill, Okla.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., December 23, 1909.—Sealed proposals will be received at this office until 3 o'clock P. M. on the 31st day of January, 1910, and then opened, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring), of an extension, remodeling, etc., to the United States Post Office at Goldsboro, North Carolina, in accordance with drawings and specification, copies of which may be obtained from the Custodian at Goldsboro, N. C., or at this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

U. S. ENGINEER OFFICE, Chicago, Ill., Dec. 1, 1909.—Sealed proposals for dredging harbor at Michigan City, Ind., will be received here until 10 a. m., Jan. 4, 1910, and then publicly opened. Information on application. THOS. M. REES, Major, Engrs.

ELECTRIC TRANSMISSION LINES.

Office of Superintendent of Water Dept., Room 103, City Hall,
Richmond, Va., December 27, 1909.

Sealed proposals, in duplicate, will be received at the above office until 4 p. m., on the 14th day of January, 1910, for furnishing the material and performing the work of constructing electric transmission lines described in plans and specifications on file in the above office.

Each bid must be accompanied by a certified check for five (5) per cent. of the value of the work proposed to be done, drawn upon some National bank and made payable to the Treasurer of the city of Richmond.

The Committee on Water reserves the right to reject any or all bids.

Envelopes containing proposals must be sealed, with the name of the bidder on the outside, and marked "Proposal for Transmission Lines," and addressed to the Committee on Water.

E. B. DAVIS,
Superintendent.

FORT MONROE, VA., December 24th, 1909.—Sealed proposals, in triplicate, will be received until 10 A. M., January 26th, 1910, for the alterations and repairs to Old Artillery School Building, at Ft. Monroe, Va., consisting of construction, repairs, heating, plumbing and electric wiring and fixtures. Plans and specifications may be seen in the office of Chief Quartermaster, Department of the East, Governor's Island, New York. Deposit of certified check for $25.00 required as guarantee return of plans and specifications. Bidders on proposal must state the name of manufacturers supplying them material. Information on application. The United States reserves the right to accept or reject any or all proposals, or any part thereof. ERNEST R. TILTON, Capt. and Q. M., Constg.

PROPOSALS FOR TIMBER WHARF CONSTRUCTION.—War Department, Office of the Constructing Quartermaster, New London, Conn., December 20, 1909.—Sealed proposals for rebuilding approximately 190 linear feet of runway to wharf at Fort Mansfield, R. I., will be received here until 10.00 A. M., January 10, 1910, and then opened. Information furnished on application. Envelopes containing proposals should be endorsed "Proposals for Wharf" and addressed to Constructing Quartermaster, U. S. Army, New London, Conn.

For other
PROPOSAL ADVERTISEMENTS
See pages 51, 52, 54, 55, 56, and
Construction News, page 234.

Specifications and Contracts

By J. A. L. WADDELL and J. C. WAIT

A valuable book on this important subject at a small cost.

Price, $1.00 net

ENGINEERING NEWS
220 Broadway New York

1. If You Have Idle Machinery
2. If It Is In Salable Condition
3. If You Want To Sell It

THEN

ENGINEERING NEWS, through the medium of its FOR SALE columns, which have been the means of disposing of many thousands of pieces of second hand equipment, can no doubt do for you as it has done for others.

An inch may be bought for one insertion for $1.50.

A trial order of four insertions will convince you.

IF YOU have a Friend not already a subscriber to the *Engineering News*, but who would be interested in receiving a *Sample Copy*, send us his name and address on a postal card. We are always pleased to mail a copy of *Engineering News* free to any Engineer, Contractor or Manufacturer not so fortunate as to be already a subscriber. THE ENGINEERING NEWS PUBLISHING CO., 220 BROADWAY, NEW YORK

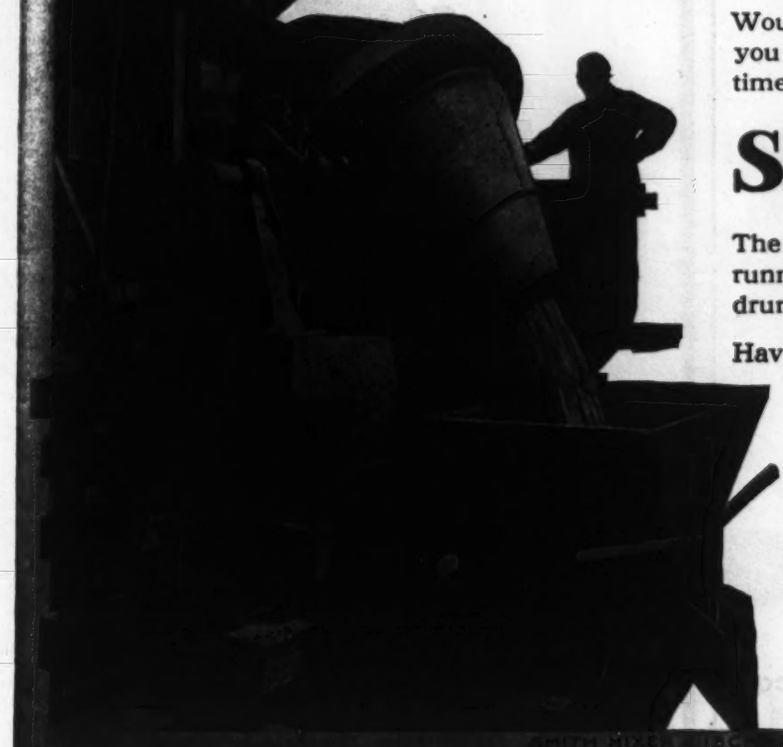
WESTERN PROPOSAL ADVERTISING

Our Chicago office, 1636 Monadnock Block, will receive proposal advertisements until

TUESDAY NOON

for insertion in the issue of the Thursday following

TO EMPTY A BUCKET



Would you spoon out the contents; or would you tip up the bucket? The latter method saves time. It is the way of the

SMITH MIXER

The Smith Mixer Discharges by tilting, while running, assuring a complete emptying of the drum and the rapid handling of each batch.

Have you seen the Smith Hopper Car?

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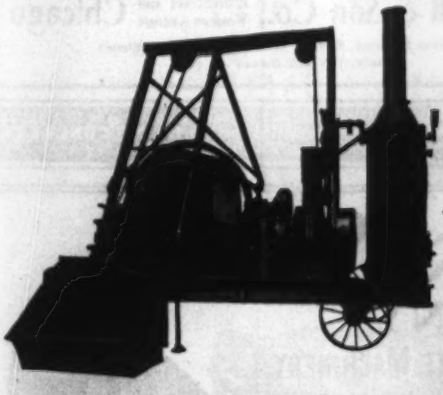
are being placed in the Gatun Locks of the Panama Canal, and the plant is only partially in working order. All this concrete is being mixed in CHICAGO IMPROVED CUBE MIXERS, which were adopted after comparative tests, on preliminary work, of all the leading types of concrete mixers. The machines were shipped to Panama in parts, and **not even a bolt was missing when the mixers came to be assembled.** This shows the care of the shop men in turning out the Chicago Improved Cube Mixer—**unerring work.** The mixer itself is **just as unerring in the high quality of its product.** This is why it has become known as the



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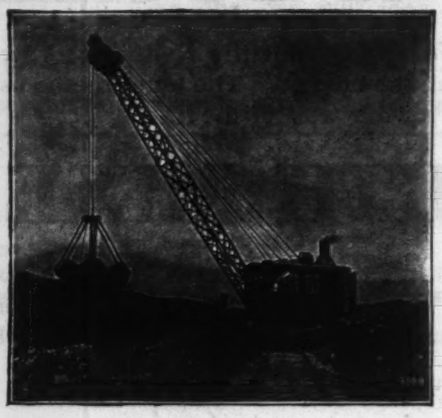

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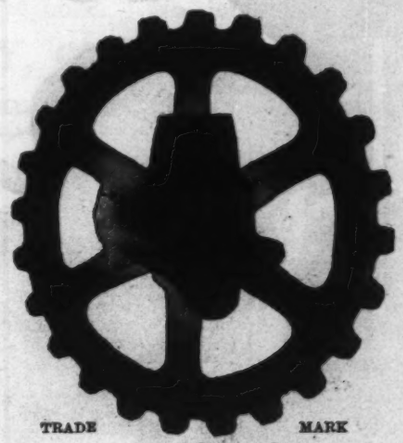

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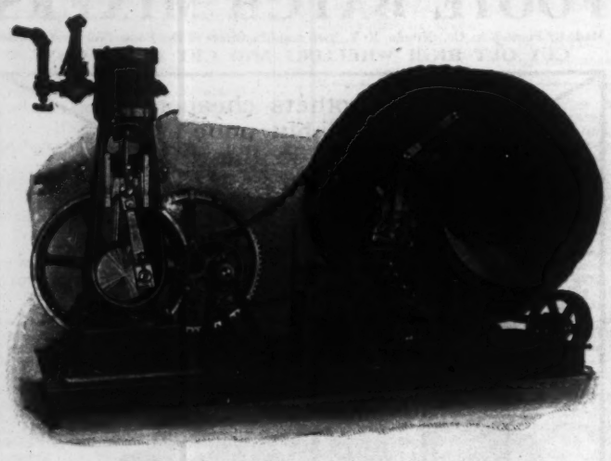

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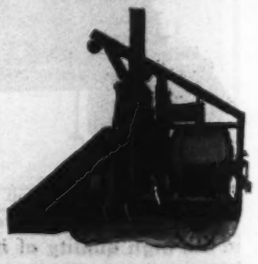

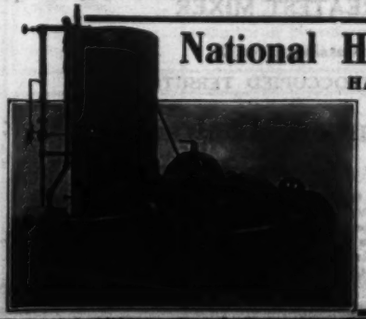

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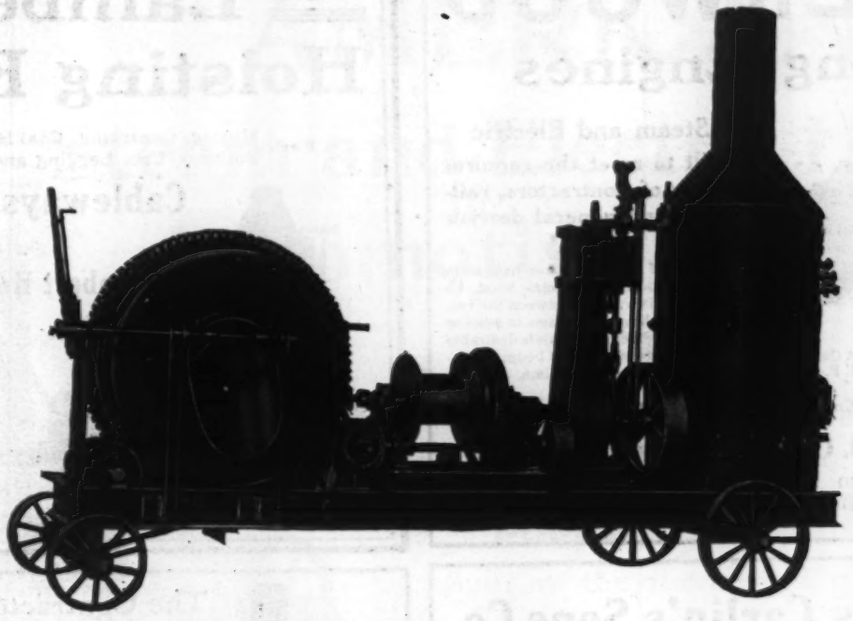

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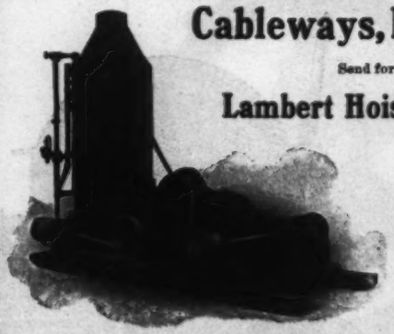

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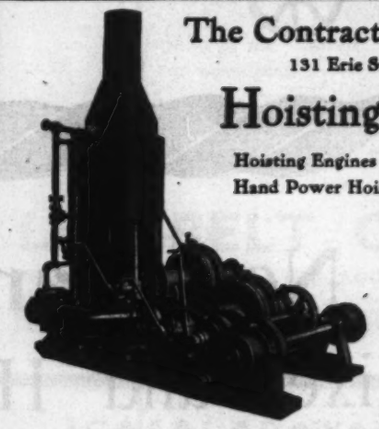

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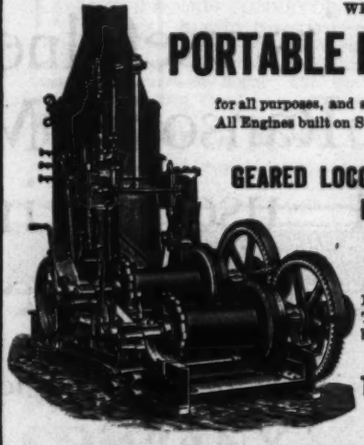

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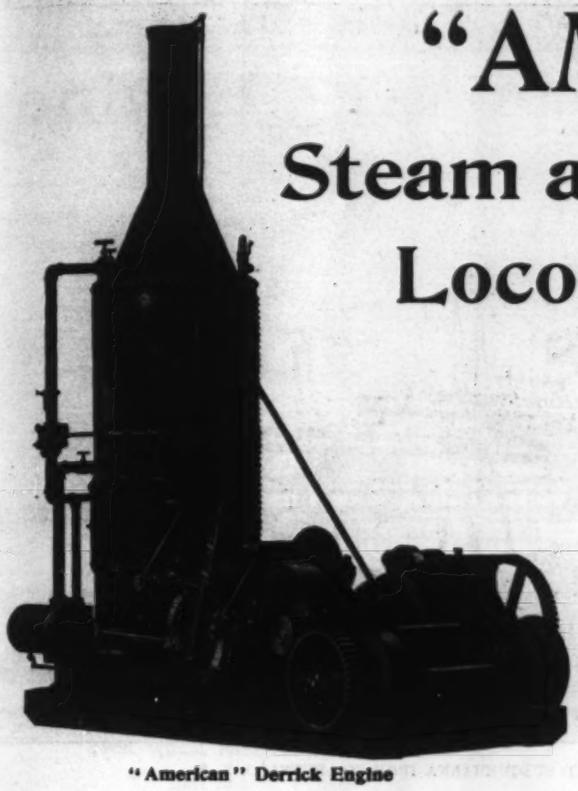

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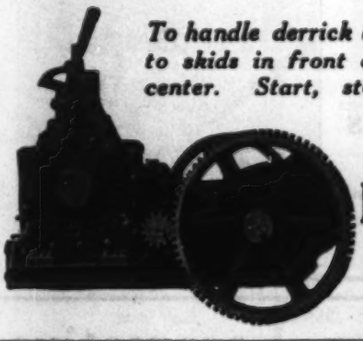

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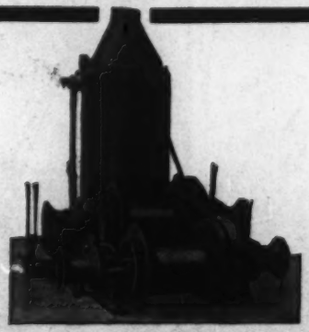

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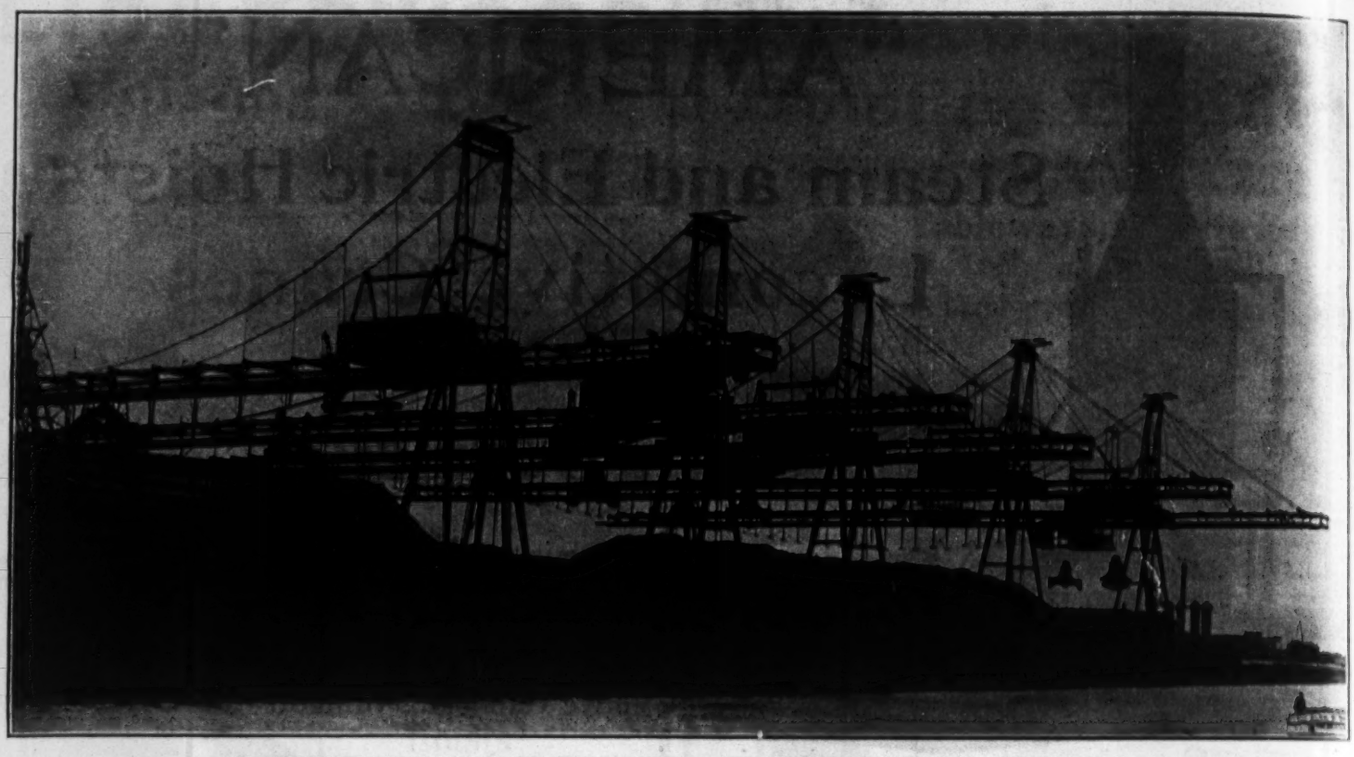

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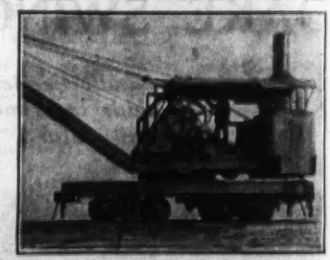

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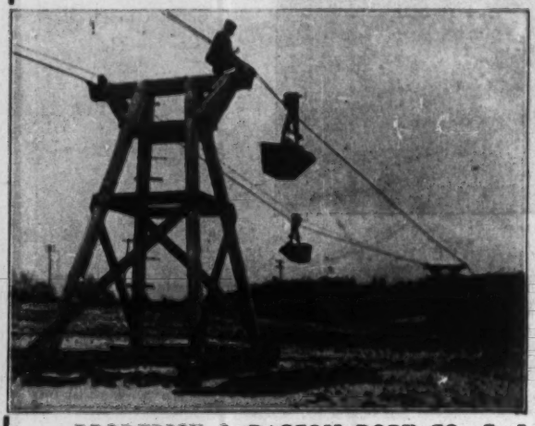

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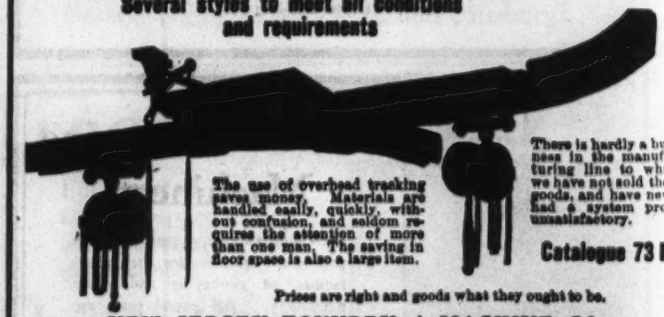

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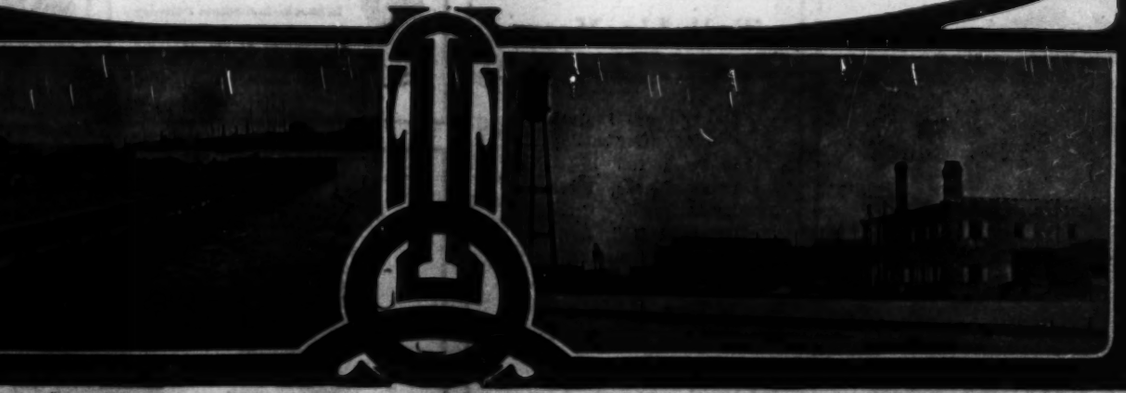

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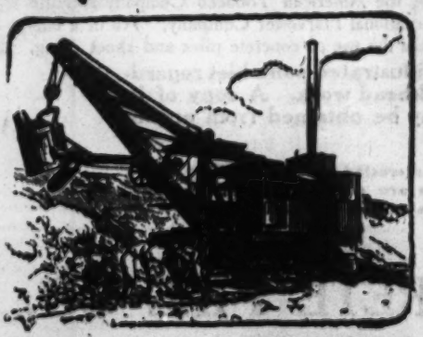

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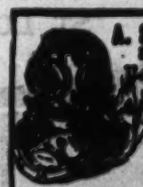

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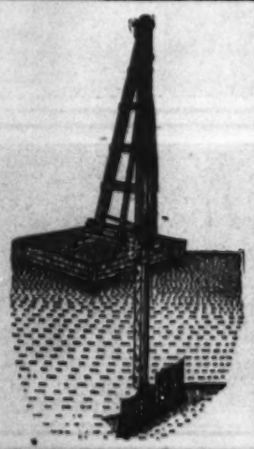

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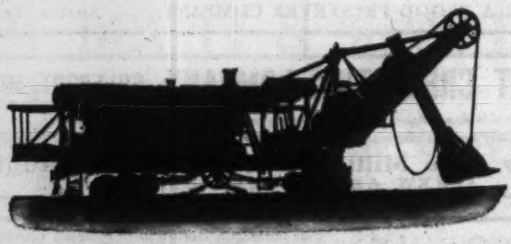

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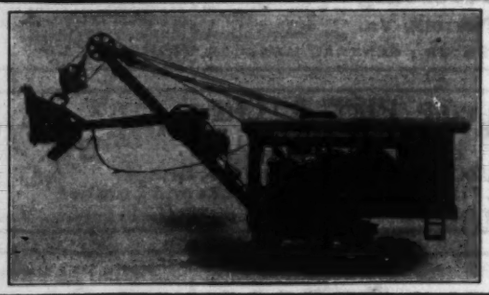

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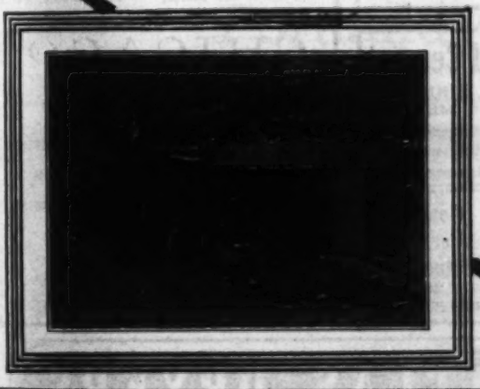

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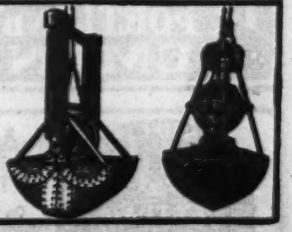

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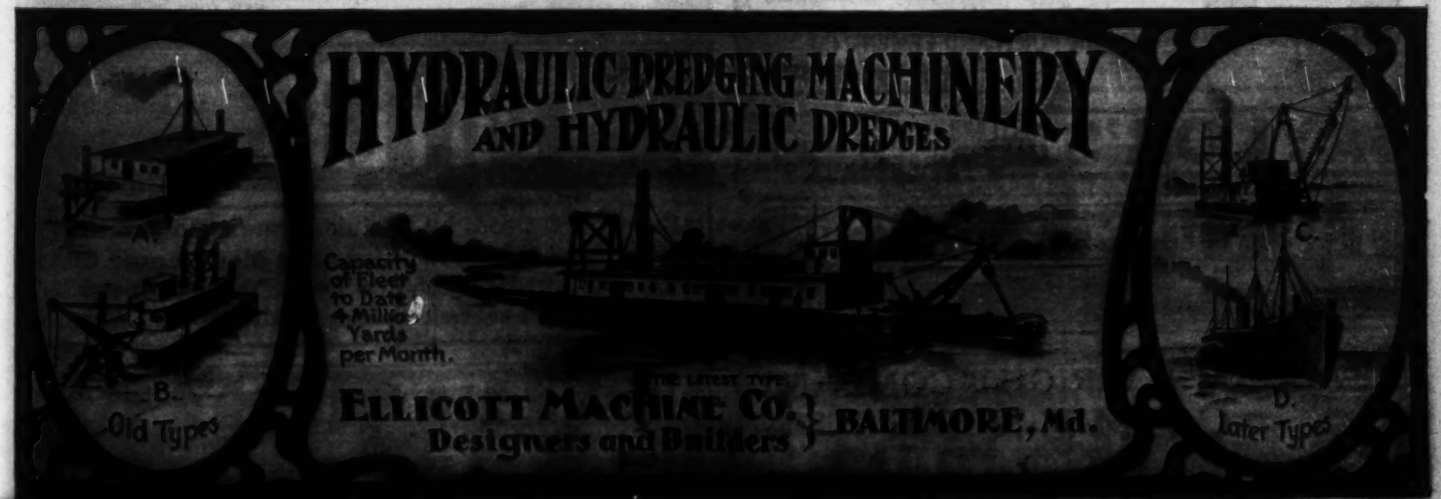

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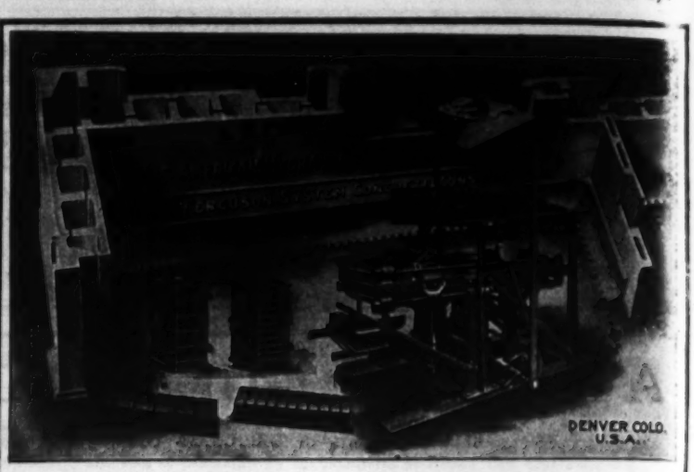

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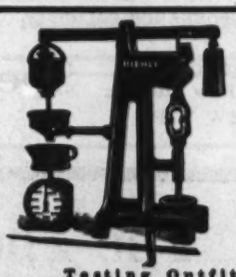

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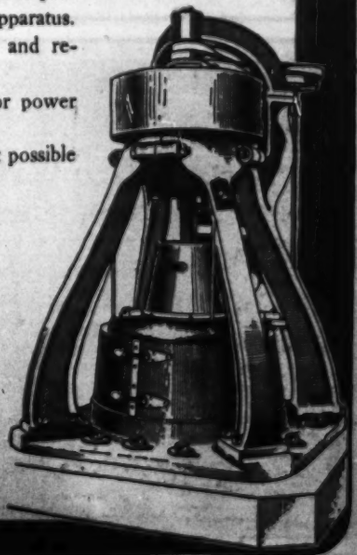

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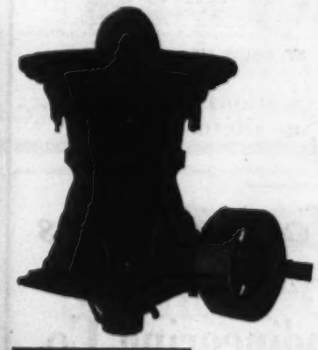

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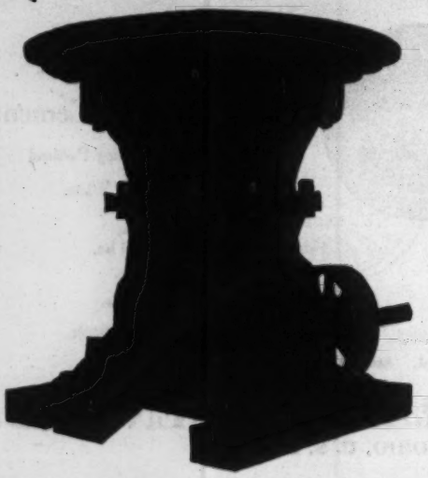

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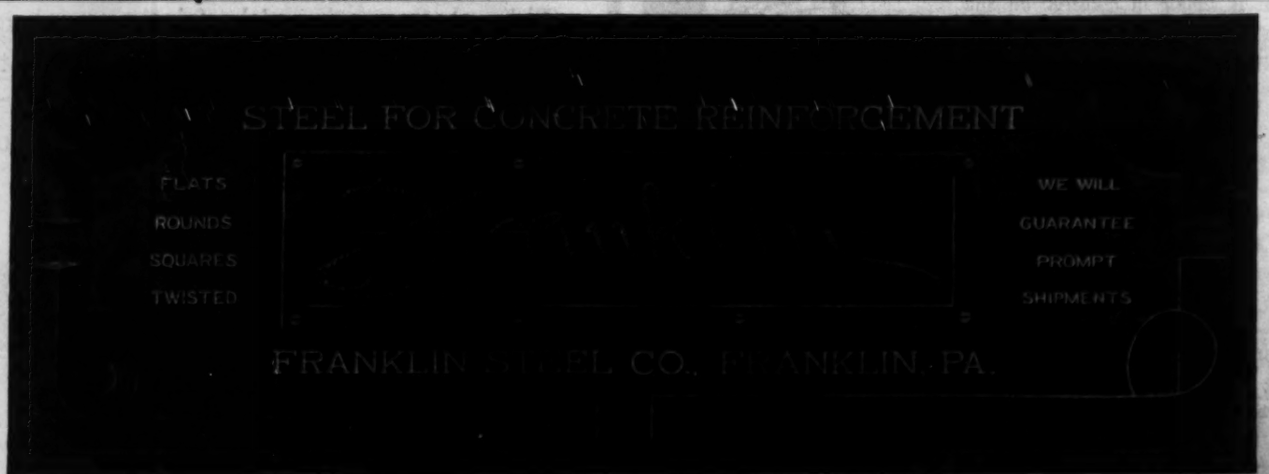

Construction view of Berger Ferro Lithic Plate (curved) for segmental arch balcony floor at Oil Engine House of M. Rumley Co., La Porte, Ind. View of upper side before concreting. O. B. Zimmerman, Mechanical Engineer; E. Burner & Co., Floor Contractors.

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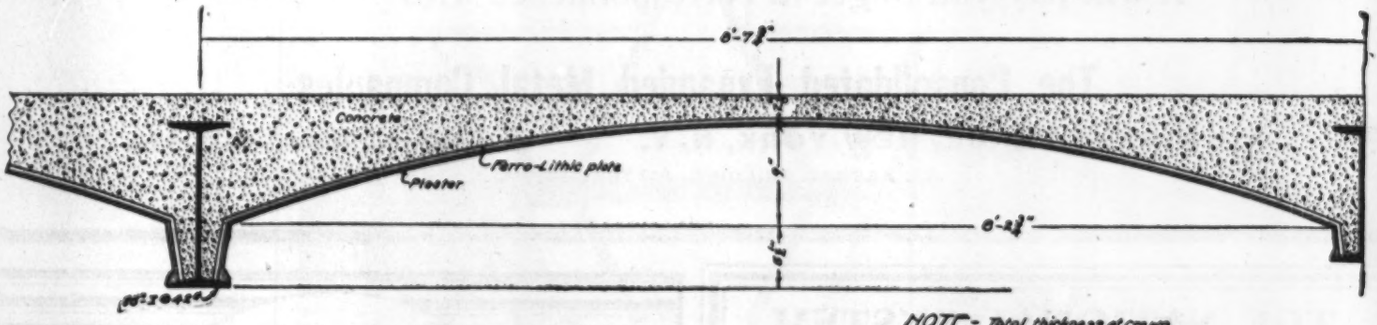

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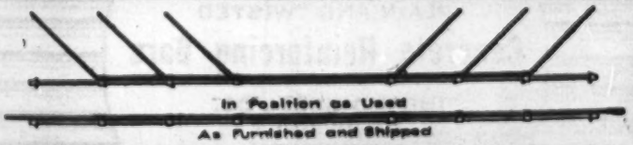

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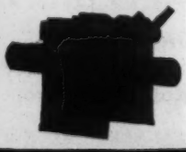

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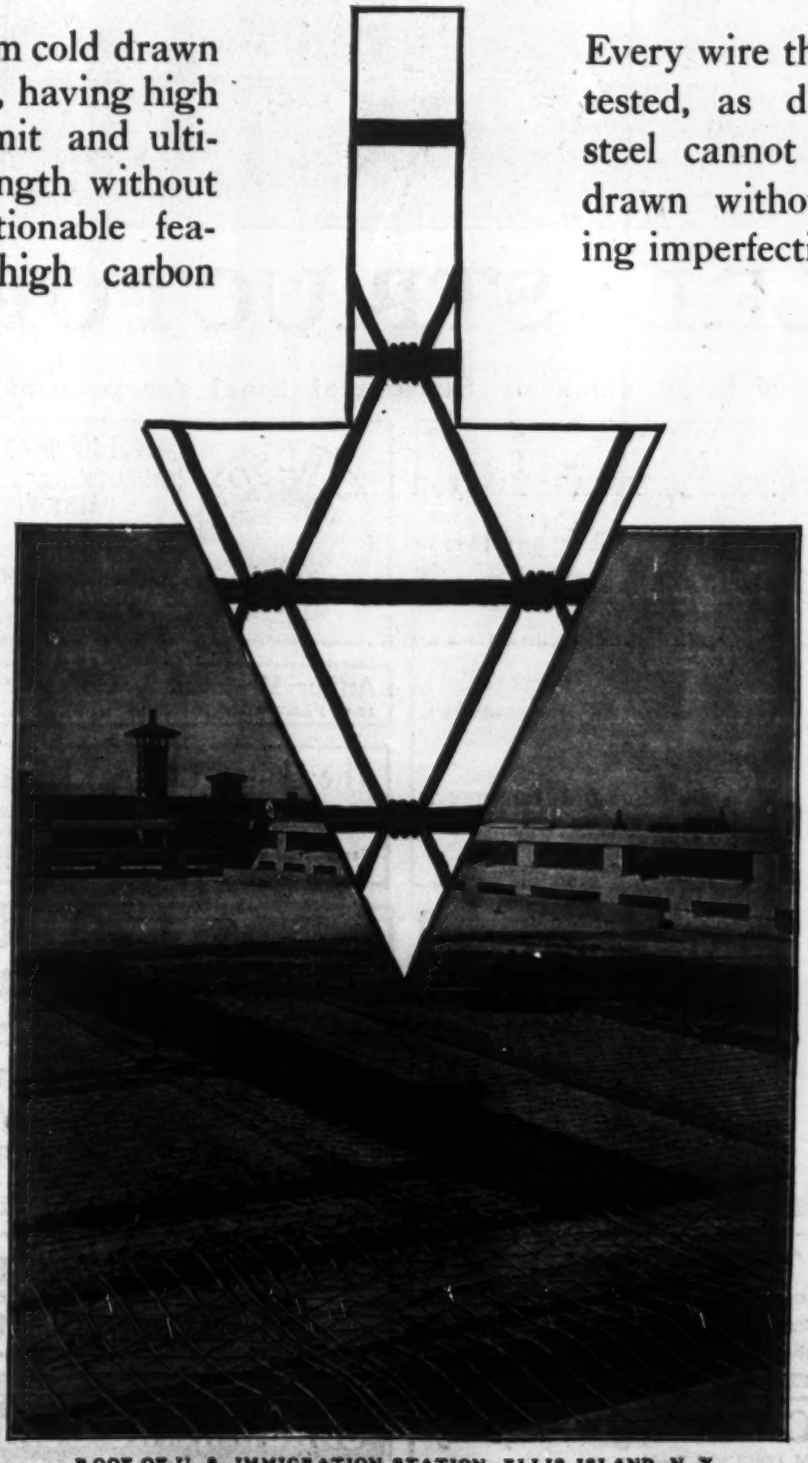

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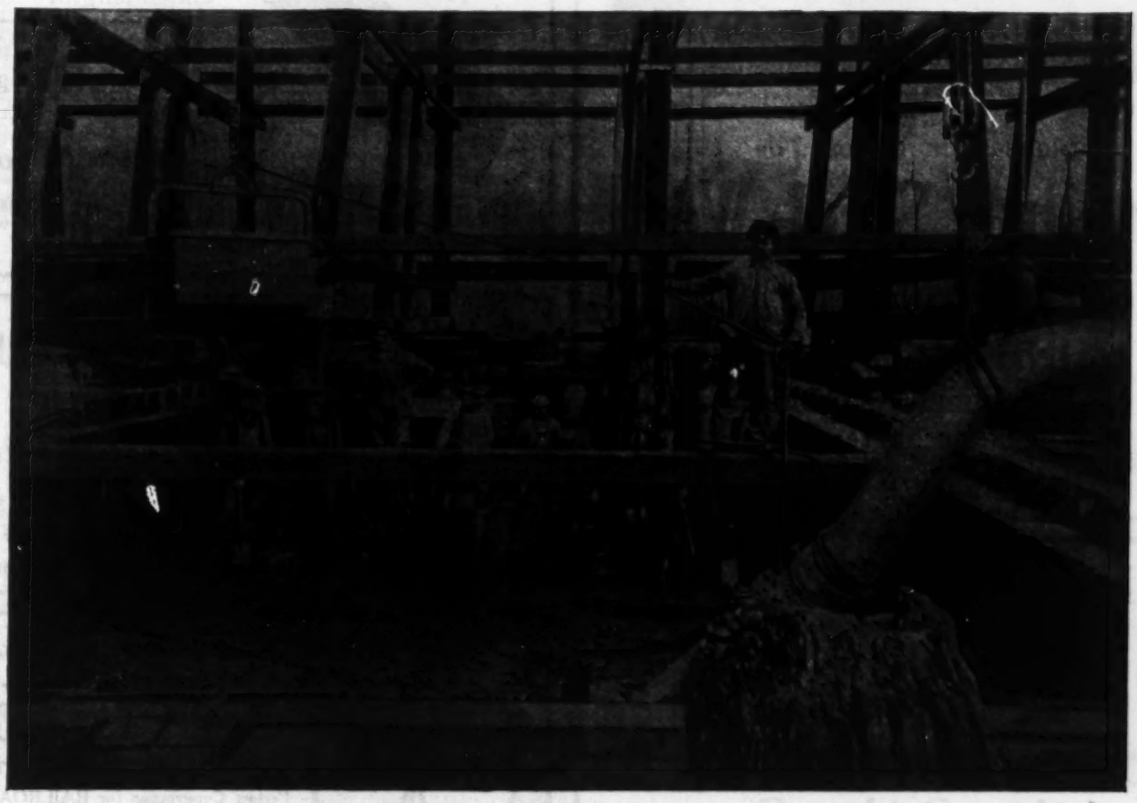

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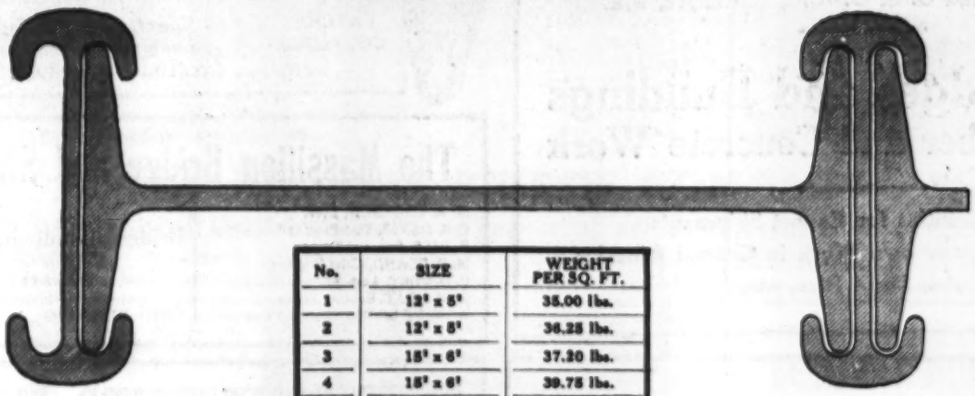

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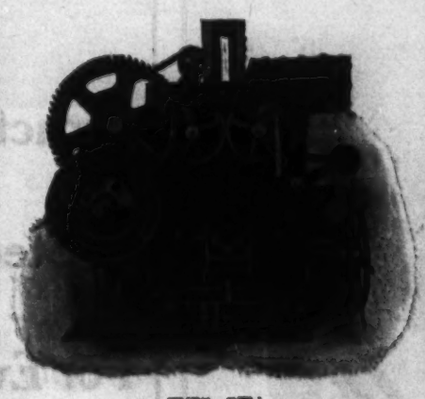

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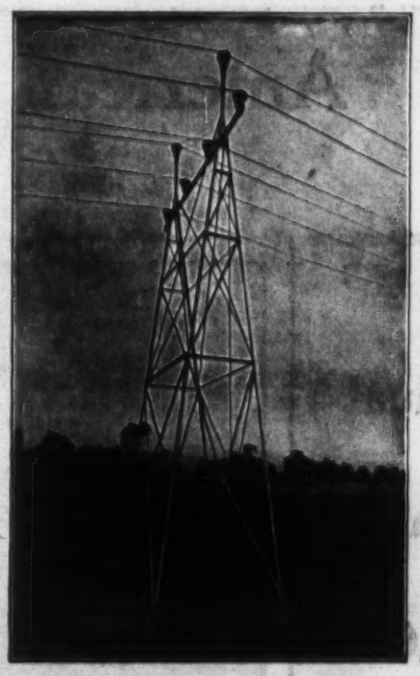

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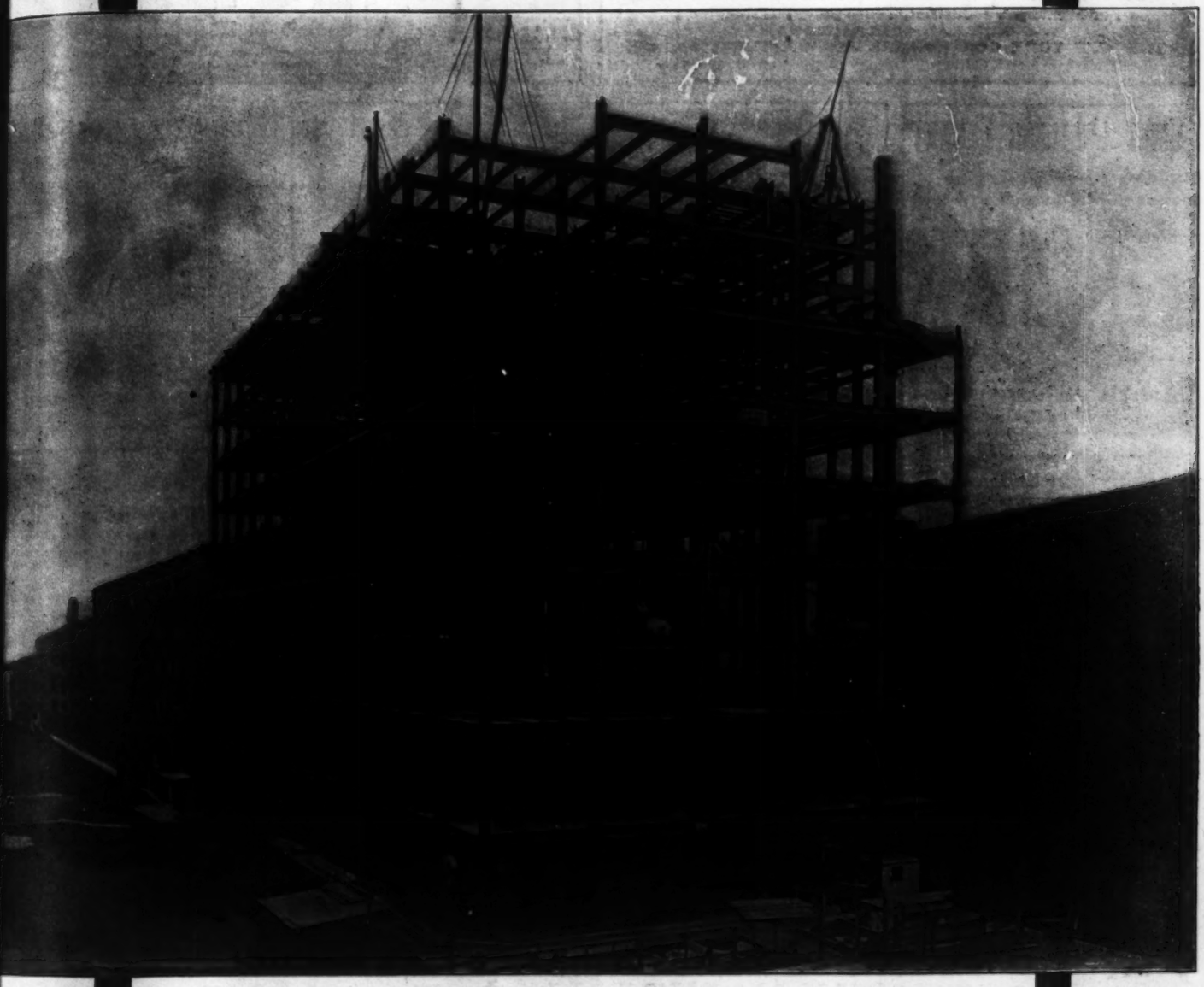

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1902	319,000	1.85%
1903	463,000	2.08%
1904	473,000	1.78%
1905	1,735,000	4.92%
1906	2,076,000	4.55%
1907	2,129,000	4.36%
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1909	*6,000,000	

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